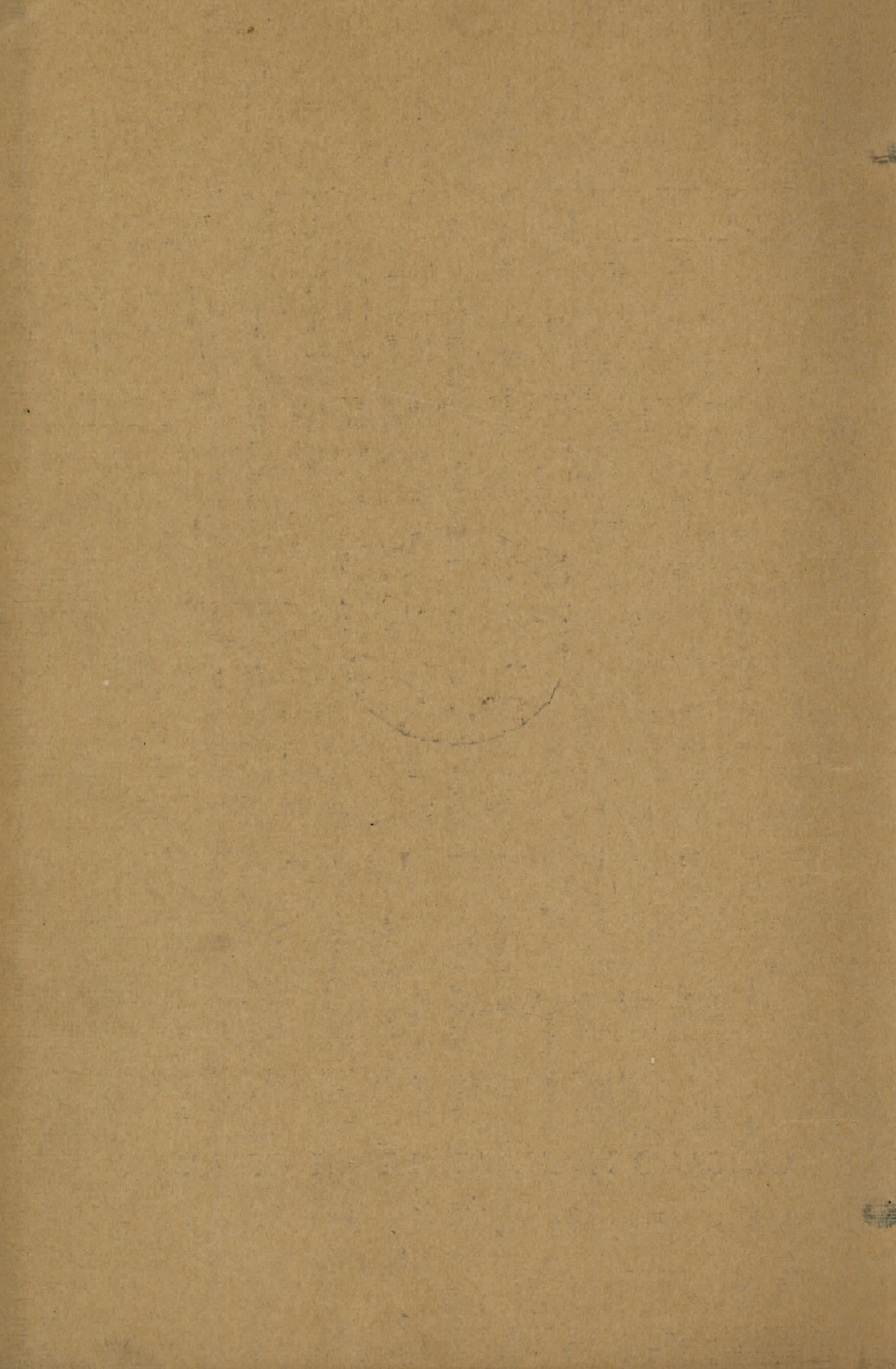


ELECTRIC TOOLS



CHICAGO PNEUMATIC TOOL COMPANY
U.S.A.



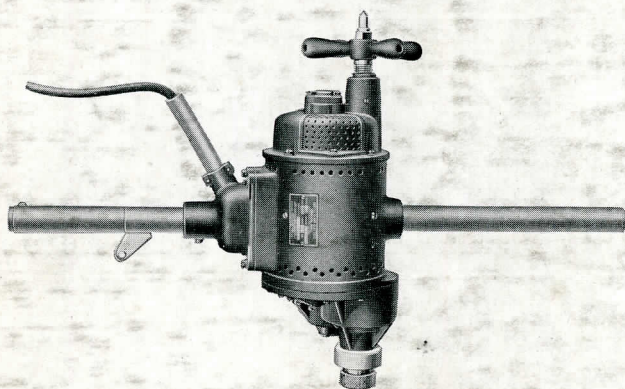
Little Giant

Universal

Electric Drills

110 and 220 Volts

Licensed under Burke Universal Motor Patent



Bulletin 616

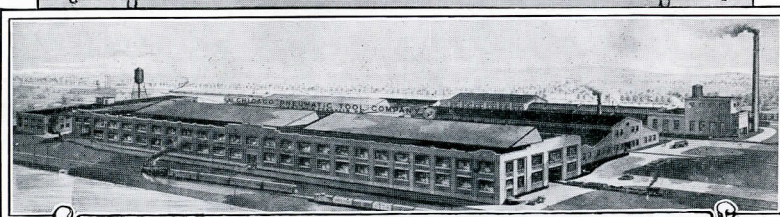
Chicago Pneumatic Tool Company
U. S. A.



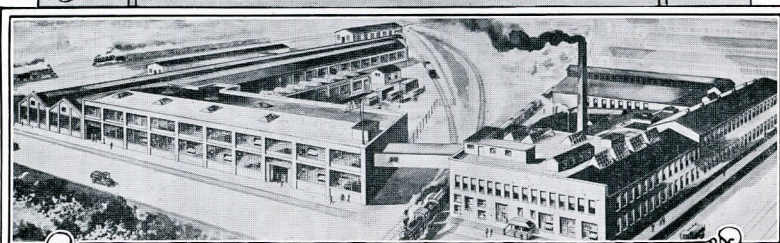
BOYER PNEUMATIC HAMMER PLANT - DETROIT, MICH.



COMPRESSOR AND ENGINE PLANT N^o1.- FRANKLIN, PA.



COMPRESSOR AND ENGINE PLANT N^o2.- FRANKLIN, PA.



LITTLE GIANT ELECTRIC TOOL PLANT -- ERIE, PA.



LITTLE GIANT AIR DRILL PLANT - CLEVELAND, OHIO.

Little Giant Universal Electric Drills

THE complete line of Universal electric drills described herein can be operated interchangeably on direct current or single phase alternating current of 60 cycles or less. This feature is of great value to contractors or others who may have occasion to do work in various localities which may be supplied with either current.

The Universal type of drill was first introduced by this company several years ago and has met with general favor. It operates at practically the same speed on either kind of current of the same voltage and has a high efficiency. The speed depends upon the load applied and is independent of the frequency of alternating current.

Little Giant Universal drills possess many points of superiority, among which the following may be mentioned as applying to the drills of $\frac{5}{16}$ -in. capacity and larger:

Improved Lubrication arrangement of bearings and gearing.

Stub Tooth Gears made of high carbon steel, carefully tempered.

Ball Bearings of the best grade used throughout.

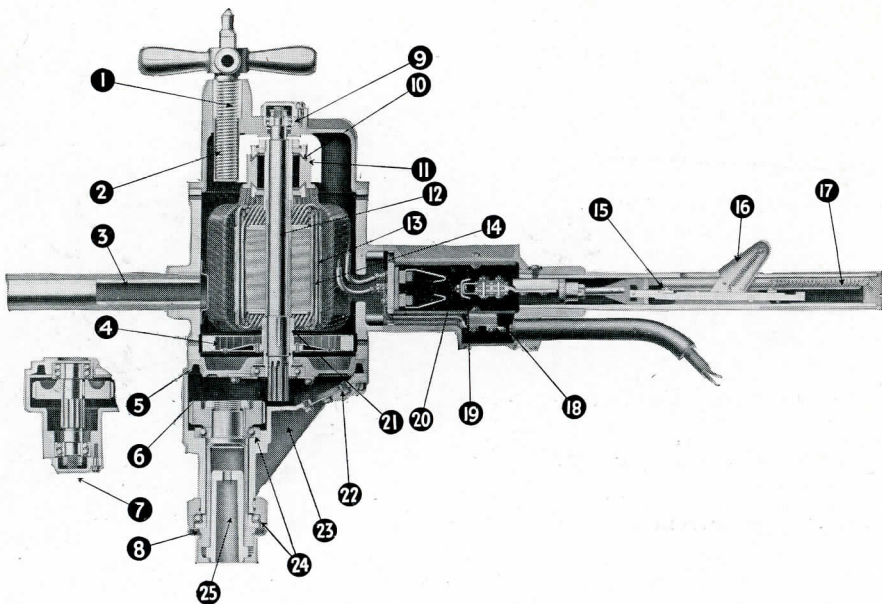
Quick Acting Switch which makes it impossible for the operator to apply the current slowly or to draw a slow destructive arc when opening the circuit.

Cable Attachment which permits the renewal of cable without disturbing the other parts of the drill.

Safety First Attachment, on the larger sizes, which causes the current to be cut off when the operator's hand is removed from the switch control lever.

Accessibility. The Little Giant drills can be dismantled in a small fraction of the time required to take apart any other drill on the market. This means an important saving in maintenance costs.

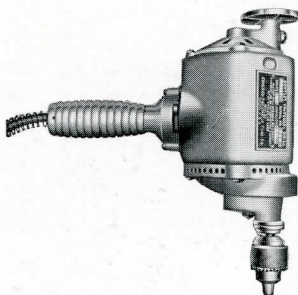
If your conditions are in any way unusual or if you have any difficulty in selecting the proper size of drill for your work, our experience is at your service and the Electric Tool Sales Division of this Company will be glad to help you select the best tool.



Distinctive Features of Little Giant Electric Drills Universal, D. C., and A. C., Types

- 1 Long feed screw entering into body of supporting bracket, thus giving same results as telescopic feed.
- 2 Protecting sheath, preventing entrance of dirt into drill if feed screw is removed.
- 3 Dead handle reinforced at point of greatest strain.
- 4 Sheet steel fan, carefully balanced and reinforced, providing thorough ventilation.
- 5 Solid transfer plate or diaphragm preventing grease or oil in gear case from entering windings.
- 6 Liberal grease compartment for providing reliable lubrication of gears and ball bearings.
- 7 Section thru intermediate gears. Note wide *double* row of ball bearings at each end of gear shaft (used on large drills). Pinion and gears made of special alloy steel carefully heat treated.
- 8 Dust protector for excluding dust from lower thrust ball bearing.
- 9 Ball bearing easily accessible for lubrication and inspection.
- 10 Commutator of sturdy design and construction, thoroughly insulated with mica.
- 11 Large opening with well secured and readily removable cover plates providing easy access to brushes and commutator.
- 12 One-piece armature shaft and pinion of tool steel, hardened and ground, insuring perfect alignment of pinion at all times. On large size drills armature shaft is removable from the armature core and commutator, which are mounted jointly on a quill or spider.
- 13 Universal Drills are equipped with laminated field structure, having distributed pole face windings.
- 14 Armature coils, form wound, heavily insulated, and carried in insulated slots in armature core. After winding and connecting to commutator, coils and armature are again dipped in insulating varnish and baked.
- 15 Quick acting switch, making slow break impossible and preventing destructive burning of contacts.
- 16 Conveniently located trigger for operating switch.
- 17 Safety return spring for automatically opening switch when operator removes hand from switch handle (used on large drills).
- 18 Terminal block for cable, permitting ready removal of cable without disturbing other connections.
- 19 Cover plates on each side of switch, providing easy access to switch contacts.
- 20 Double pole, double break switch. Rugged contacts are readily removable.
- 21 Long fan-hub of high grade steel, hardened and ground. Press fit on shaft with long key insures permanent rigidity.
- 22 Cover plate quickly removable for inserting grease in gear case.
- 23 Reinforcing rib on gear case, insuring proper strength and rigidity.
- 24 Combined annular and thrust bearing at each end of spindle.
- 25 Removable socket inserted in spindle. Driving lugs on socket milled from the solid.

Nos. 000 and 000X Little Giant Universal Electric Drill



THE No. 000 drill is carried in stock wound for either 110 or 220 volts. It is adapted for drilling holes in metal up to 3-16 inch in diameter. When operating at average rated load the speed is 1,000 R. P. M.

Code Words	
110 Volts	220 Volts
MONOSTLY	MONOSTOR

The No. 000X drill is similar to the No. 000 described above but is provided with slower speed gearing and is carried in stock wound for either 110 or 220 volts. It is adapted for drilling holes in metal up to $\frac{1}{4}$ inch in diameter. When operating at average rated load the speed is 550 R. P. M.

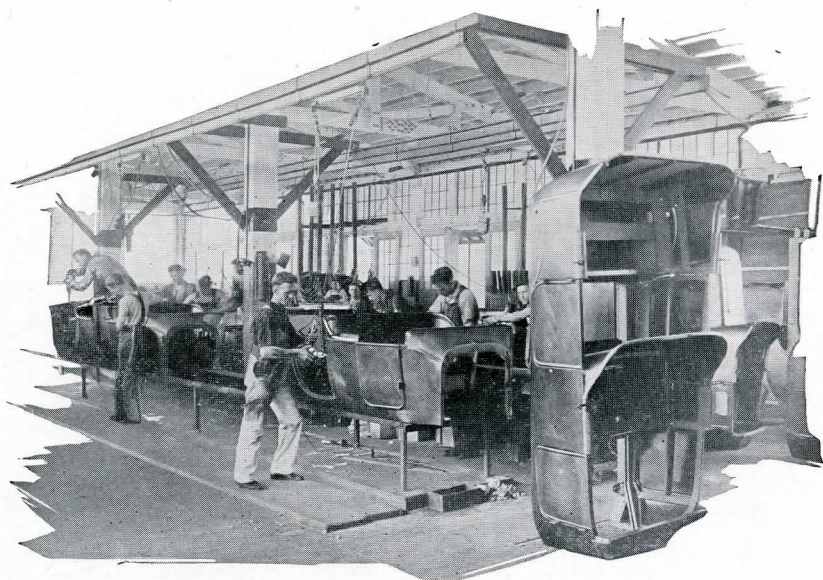
Code Words	
110 Volts	220 Volts
MONGOLLY	MONGOLOR

EQUIPMENT FOR NO. 000 AND NO. 000X DRILLS:

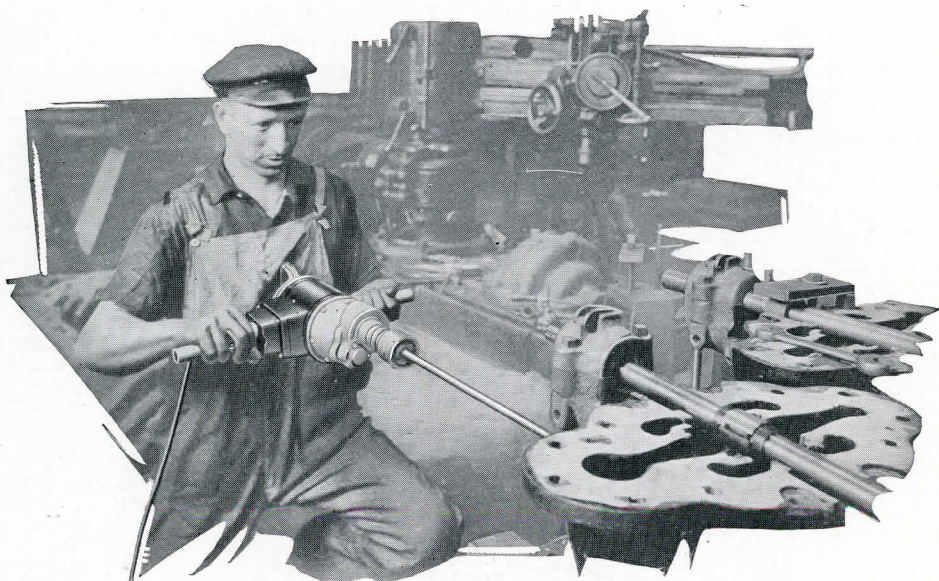
- Breast Plate.
- Ten feet electrical conductor with Edison connector.
- Spade handle can be furnished at extra cost.
- Chuck: For No. 000 drill, 0 to 3-16 in.; for No. 000X drill, 0 to $\frac{1}{4}$ in.

GENERAL DATA:

	No. 000	No. 000X
Net weight in pounds	4 $\frac{3}{4}$	5 $\frac{1}{2}$
Overall length breast plate to end of chuck in inches	9 $\frac{3}{8}$	10 $\frac{1}{2}$
Minimum distance from housing to center of spindle in inches	1	$\frac{3}{4}$
Full Load:		
Approximate energy consumption in watts	160	170
Speed in R. P. M.	1000	550
Maximum Load for Short Periods:		
Energy consumption in watts	200	200
Speed in R. P. M.	900	475



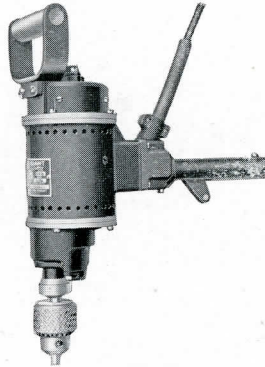
Ford Motor Car Company cuts the cost of quantity production at this Kearney, New Jersey, assembly plant, by means of Little Giant Portable Electric Tools.



Little Giant Universal Drills in reaming operation at Lea Courtney Co., New York City. Their easy portability makes Little Giants adaptable to many machine shop operations of this kind.

No. 00B

Little Giant Universal Electric Drill



THIS drill is wound for either 110 or 220 volts. It can be furnished in two styles, viz.: with the switch handle located on the side of the drill and the plain spade handle at the top as shown in the cut; or without switch handle at the side, but having the switch and operating mechanism located in the spade handle, this being known as the pistol grip type. Either type of drill is adapted for drilling holes in metal up to $\frac{5}{16}$ inch in diameter.

EQUIPMENT:

Spade Handle.

Adjustable drill chuck to take straight shank drills 0 to $\frac{5}{16}$ inch in diameter.

Ten feet electrical conductor with Edison Connector.

GENERAL DATA:

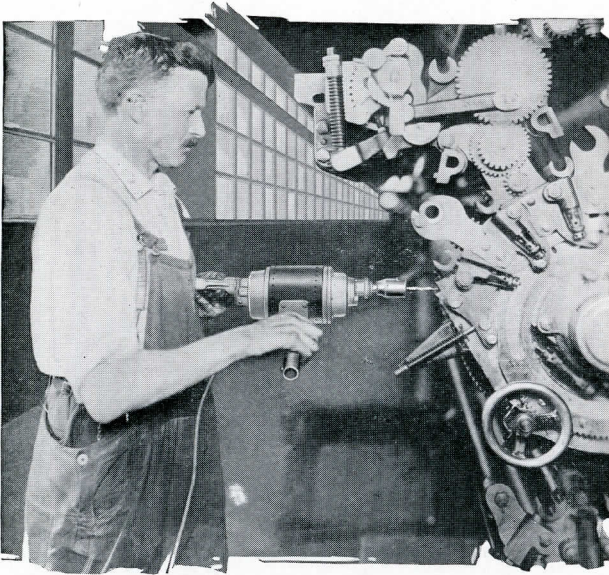
	Style	
	Standard	Pistol Grip
Net weight in pounds	10	8 $\frac{1}{2}$
Overall length spade handle to end of chuck in inches ..	13 $\frac{3}{4}$	14 $\frac{1}{8}$
Minimum distance from housing to center of spindle in inches	1 $\frac{1}{8}$	1 $\frac{1}{8}$

FULL LOAD:

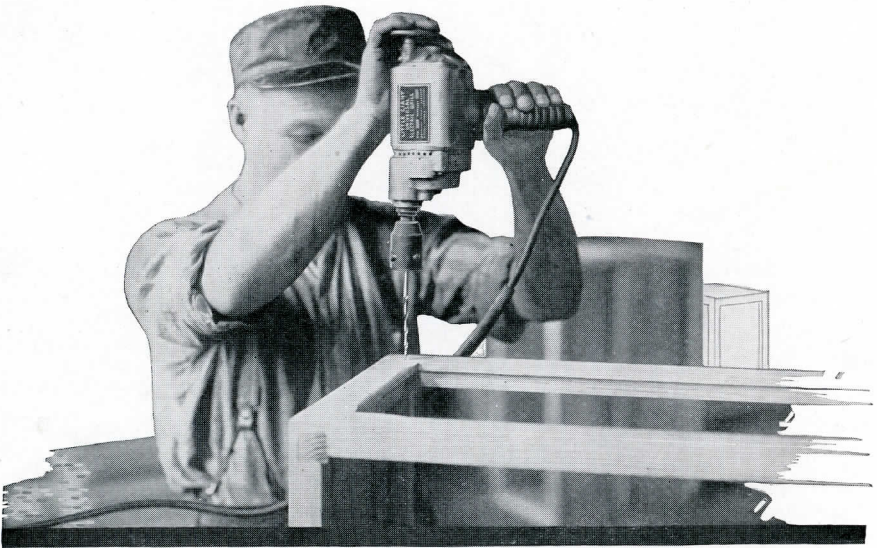
Approximate energy consumption in watts	330	330
Speed in R. P. M.	875	875
Maximum Speed for Short Periods:		
Approximate energy consumption in watts	475	475
Speed in R. P. M.	575	575

Code Words

	110 Volts	220 Volts
Standard (Quick Acting Switch at side)	Monimbly	Monimbor
Pistol Grip	Mononly	Mononor

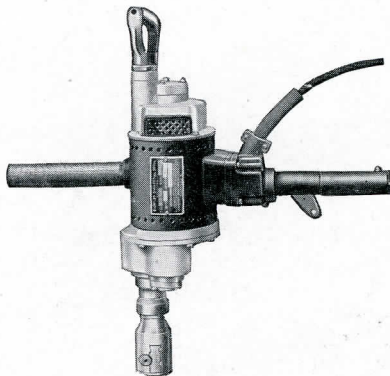


Little Giant Universal Electric Drills are production hustlers in the making of rotary presses at the Hall Printing Press Co., Dunnellen, N. J.



Little Giant No. 000X Universal Electric Drill Wood Boring in a Chicago Heights Manufacturing Plant. The all around adaptability of this Electric Drill for drilling in metal and wood, is apparent from its compact design and ease of handling.

No. 0B
Little Giant Universal Electric Drill



THIS drill is carried in stock wound for 110 or 220 volts. It is adapted for drilling holes in metal up to $\frac{3}{8}$ inch in diameter. In the ordinary grades of wood up to $4\frac{1}{2}$ inches thick, it will drill holes $\frac{5}{8}$ inch in diameter and a fine feed double twist bit is recommended. When drilling in wood of thickness greater than $4\frac{1}{2}$ inches up to 12 inches maximum, the drill will handle a $\frac{1}{2}$ -inch bit and a single twist ship auger is recommended. When operating at average full load the spindle speed is 770 R. P. M. The pipe handle at the left of the cut is removable, so as to permit of close corner drilling.

EQUIPMENT:

- Spade Handle.
- Adjustable drill chuck to take straight shank drills, 0 to $\frac{3}{8}$ inch diameter.
- Ten feet electrical conductor with Edison connector.
- If desired, a breast plate can be furnished in place of spade handle.
- For wood boring, a wood bit chuck to take wood bits with $\frac{1}{2}$ -inch straight round shanks can be furnished in place of adjustable chuck.

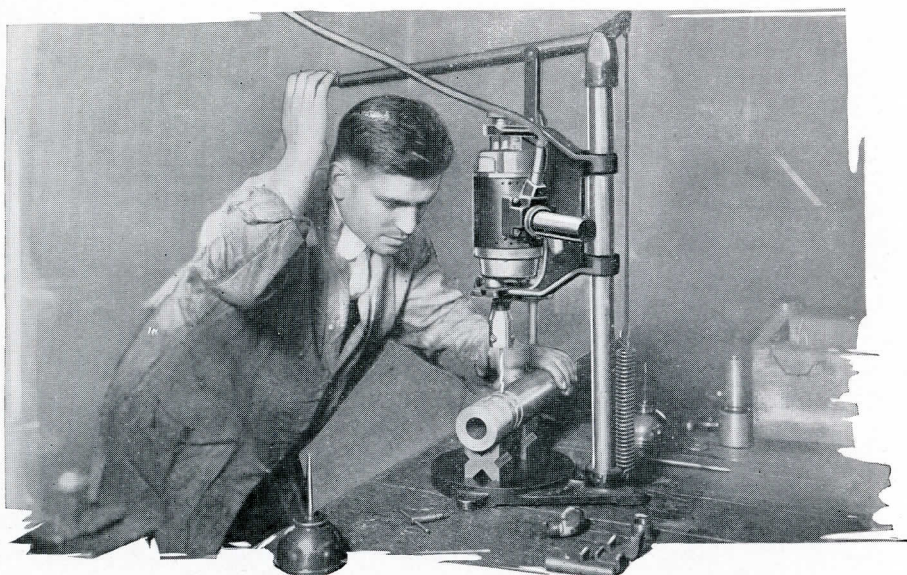
GENERAL DATA:

Net weight, pounds	13
Overall length, spade handle to end of chuck, inches	$16\frac{7}{8}$
Overall length, breast plate to end of chuck, inches	$14\frac{3}{4}$
Minimum distance from housing to center of spindle, inches..	$1\frac{5}{8}$

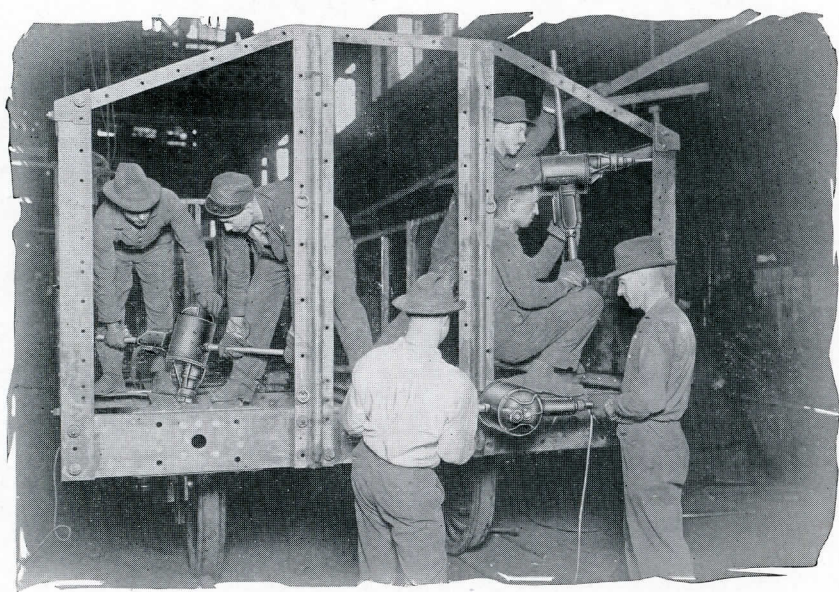
Full Load:

Approximate energy consumption, watts	400
Speed, R. P. M.	700
Maximum Load for Short Periods:	
Energy consumption, watts ..	500
Speed, R. P. M.	500

	110 Volts	220 Volts
Code Words	Monacardly	Monacardor



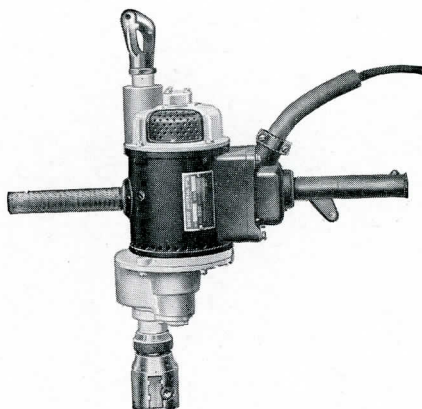
Little Giant No. 00 Electric Drill with Little Giant Drilling Stand is a valuable tool in a small shop or repair department. These Drilling Stands are built in five sizes to accommodate No's 000, 000X, 00B, 0B and 1B Little Giant Universal and D. C. type Drills.



Little Giant Electric Drills are standard in many of the world's largest car and locomotive shops, shipyards, and other heavy metal working industries. Hundreds of them reduce production costs in this plant of a well known car builder.

No. 1B

Little Giant Universal Electric Drills



THIS drill is carried in stock wound for 110 or 220 volts. It is adapted for drilling holes in metal up to $\frac{1}{2}$ inch in diameter. In the ordinary grades of wood up to $4\frac{1}{2}$ inches thick, it will drill $\frac{3}{4}$ inch holes and a fine feed double twist bit is recommended. When drilling in wood of thickness greater than $4\frac{1}{2}$ inches up to 15 inches maximum, the drill will handle a $\frac{5}{8}$ -inch bit and a single twist ship auger is recommended. When operating at average full load the spindle speed is 400 R. P. M. The pipe handle at the left of the cut is removable, so as to permit of close corner drilling.

EQUIPMENT:

Spade handle.

Adjustable drill chuck to take straight shank drills, 0 to $\frac{1}{2}$ inch diameter.

Ten feet electrical conductor with fused Edison connector.

Two extra fuses.

If desired, a breast plate can be furnished in place of spade handle.

For wood boring, a wood bit chuck to take wood bits with $\frac{1}{2}$ -inch straight round shanks can be furnished in place of the adjustable chuck.

GENERAL DATA:

Net weight, pounds	21
Overall length, spade handle to end of chuck, inches	18 $\frac{3}{8}$
Overall length, breast plate to end of chuck, inches	17 $\frac{1}{4}$
Minimum distance from housing to center of spindle, inches..	1 $\frac{3}{8}$

Full Load:

Approximate energy consumption, watts	475
Speed, R. P. M.	400

MAXIMUM LOAD FOR SHORT PERIODS:

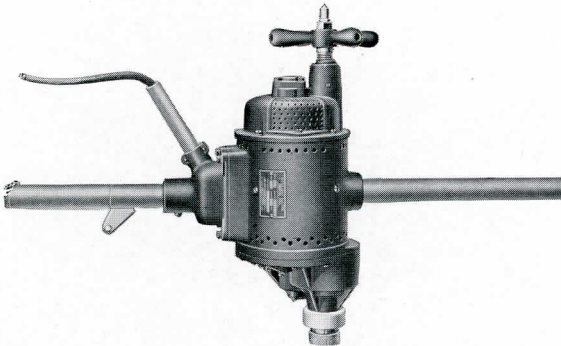
Energy consumption, watts ..	575
Speed, R. P. M.	300

CODE WORDS AND FUSES.

110 Volts		220 Volts	
	Fuse recommended		Fuse recommended
Monapanly	8 Amperes	Monapanor	4 Amperes

No. 1½B

Little Giant Universal Electric Drill



THIS drill is a standard stock tool, wound for either 110 or 220 volts. It is adapted for drilling holes in metal up to $\frac{3}{4}$ inch in diameter. In the ordinary grades of wood up to $4\frac{1}{2}$ inches thick it will drill $1\frac{1}{8}$ inch holes and a fine feed double twist bit is recommended. When drilling in wood of greater thickness than $4\frac{1}{2}$ inches up to 15 inches maximum, the drill will handle a 1-inch bit and a single twist ship auger is recommended. The pipe handle shown at the right of the cut is removable to permit close corner drilling.

EQUIPMENT:

- Feed Screw (Spade handle optional).
- No. 2 Morse Taper removable socket.
- Fifteen feet two conductor electrical cable with fused Edison socket.
- Two extra fuses.
- For wood boring, a wood bit chuck to take wood augers with $\frac{1}{2}$ -inch straight round shanks and a spade handle will be furnished in place of feed screw.

GENERAL DATA:

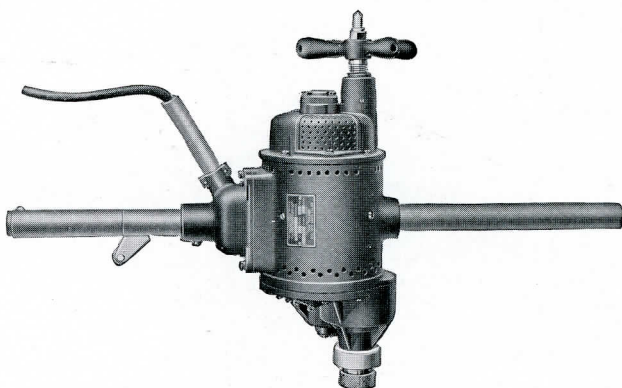
Net weight in pounds	32
Over all length, feed screw to end of drill socket, in inches	17½
Length of feed, in inches	2½
Over all length, spade handle to end of drill socket, in inches.....	18⅝
Minimum distance from housing to center of spindle, in inches	1⅞
Full Load:	
Approximate energy consumption in watts	660
Speed in R. P. M.	250
Maximum Load for Short Periods:	
Energy consumption in watts	780
Speed in R. P. M.	200

CODE WORDS AND FUSES

110 Volts		220 Volts	
Code	Fuse recommended	Code	Fuse recommended
Monalbly	8 Amperes	Monalbor	4 Amperes

No. 2B

Little Giant Universal Electric Drill



THIS drill is a standard stock tool, wound for either 120 or 240 volts. It is adapted for drilling holes in metal up to $\frac{7}{8}$ inch in diameter. In the ordinary grades of wood up to $4\frac{1}{2}$ inches thick it will drill $1\frac{3}{8}$ -inch holes and a fine feed double twist bit is recommended. When drilling in wood of greater thickness than $4\frac{1}{2}$ inches up to 15 inches maximum, the drill will handle a $1\frac{1}{8}$ -inch bit and a single twist ship auger is recommended. The pipe handle shown at the right of the cut is removable to permit close corner drilling.

EQUIPMENT:

- Feed screw (spade handle optional)
- No. 2 Morse Taper removable socket.
- Fifteen feet two conductor electrical cable with fused Edison socket.
- Two extra fuses.
- For wood boring, a wood bit chuck to take wood augers with $\frac{1}{2}$ -inch straight round shanks and a spade handle will be furnished in place of feed screw.

GENERAL DATA:

Net weight, in pounds	45
Over all length, feed screw to end of drill socket in inches..	$17\frac{1}{2}$
Length of feed in inches	$2\frac{1}{2}$
Over all length, spade handle to end of drill socket in inches..	$18\frac{3}{8}$
Minimum distance from housing to center of spindle in inches	$1\frac{7}{8}$

Full Load:

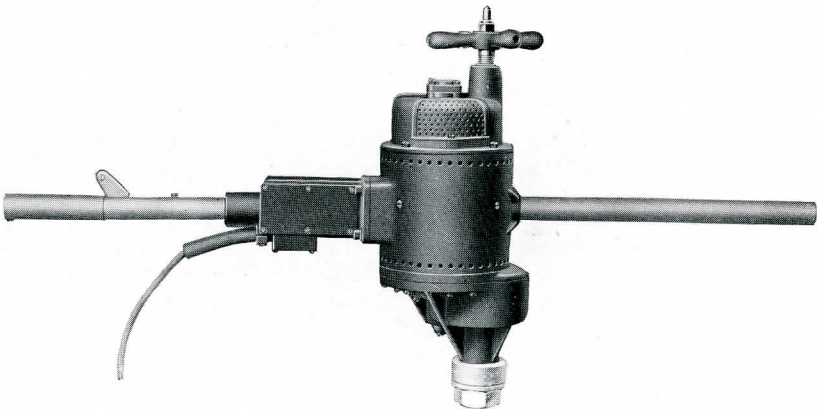
Approximate energy consumption in watts	1000
Speed in R. P. M.	165
Maximum Load for Short Periods:	
Energy consumption in watts	1250
Speed in R. P. M.	120

CODE WORDS AND FUSES

120 Volts	
Code	Fuse Recommended
Monaberly	12 Amperes

240 Volts	
Code	Fuse Recommended
Monaberor	6 Amperes

No. 3B
Little Giant Universal Electric Drill



THIS drill is a standard stock tool, wound for either 120 or 240 volts. It is adapted for drilling holes in metal up to 1¼ inch in diameter. In the ordinary grades of wood up to 4½ inches thick it will drill 2-inch holes and a fine feed double twist bit is recommended. When drilling in wood of greater thickness than 4½ inches up to 15 inches maximum the drill will handle a 1¾-inch bit and a single twist ship auger is recommended. The pipe handle shown at the right of the cut is removable to permit close corner drilling.

EQUIPMENT:

- Feed Screw (Spade handle optional).
- No. 3 Morse Taper removable socket.
- Twenty feet two conductor electrical cable with fused Edison socket.
- Two extra fuses.
- For wood boring, a wood bit chuck to take wood augers with ½-inch straight round shanks and a spade handle will be furnished in place of feed screw.

GENERAL DATA:

Net weight in pounds	68	Full Load:	
Over all length, feed screw to end of drill socket in inches..	18¾	Approximate energy consumption in watts	1600
Length of Feed in inches	3	Speed in R. P. M.	110
Over all length, spade handle to end of drill socket in inches..	22¼	Maximum Load for Short Periods:	
Minimum distance from housing to center of spindle in inches	2½	Energy consumption in watts 2000	
		Speed in R. P. M.	90

CODE WORDS AND FUSES

120 Volts		240 Volts	
Code	Fuse Recommended	Code	Fuse Recommended
Monertly	20 Amperes	Monertor	10 Amperes

Care of Little Giant Electric Drills

IT IS of vital importance to have portable electric drills in first-class operating condition at all times and this can be accomplished by the exercise of a little care and attention. When the user's plant is provided with a tool room, it is desirable to have the tools sent there occasionally to be looked over and if necessary, put in the best possible condition. It is to be expected that natural wear of the brushes and commutators will take place, therefore, these parts should be looked at occasionally.

In order to assist in the care of electric drills, the following suggestions may be of benefit:

Lubrication: The gears of Little Giant electric drills are intended to run in grease and an opening in the gear case is provided for its insertion. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the drills are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears and bearings. We have found non-fluid oil, grade F-2, very satisfactory on the type of Little Giant drills, described in this bulletin.

All of the bearings in the type B Little Giant drills are of the ball type, and care should be taken to see that these bearings are supplied with the necessary grease for lubricating as outlined above.

Commutator and Brushes: Commutator and brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the clock-spring type, which give a uniform pressure through a wide range, so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sand paper in cleaning the commutator. Never use emery cloth.

Ventilation: When the drills are being examined in the tool room, it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

Switch: The switch furnished with the Little Giant electric drill is of the quick acting type and especially designed to use with these tools. We believe that it is the best switch ever produced for portable electric tools. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals. The switch contacts should be examined and cleaned occasionally. Under normal conditions of operation there should be no destructive arcing at the switch and the contacts will last for a long time.

Cable: Little Giant drills are furnished with a very high-grade electric cable, manufactured especially for tools of this character. Do not permit your workmen to drag the drills around by the cable or to drop heavy pieces on it.

Feed Screws: Do not use feed screws other than those furnished by this Company. A longer feed screw than our standard is apt to give trouble by being screwed down too far, thus breaking through the feed screw shield and cutting into the windings.

It will repay you to follow the above suggestions

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Chicago Pneumatic
Building



6 East 44th Street
New York, U. S. A.

Branch Offices and *Service Stations

*Birmingham, Ala. 1925 No. 5th Ave.
*Boston, Mass. 182 High St.
*Buffalo, N. Y. 208 Franklin St.
*Chicago, 300 No. Michigan Ave.
*Cincinnati, Ohio. Pearl and Vine Sts.
*Cleveland, Ohio. 109 St. Clair Ave., N.E.
*Detroit, Mich. Brush and Larned Sts.
El Paso, Texas. 303 San Francisco St.
Houston, Texas. 407 Carter Bldg.
Joplin, Mo. 308 Wall St.
*Los Angeles, Cal., 307 East Third St.

*Minneapolis, Minn. 5th Ave. and 5th St., So.
New Orleans, La. 853 Carondelet St.
*New York. 6 East 44th St.
*Philadelphia, Pa. 1740 Market St.
*Pittsburgh, Pa. 12 Wood St.
Richmond, Va. 1004 Mutual Bldg.
Salt Lake City, Utah. 117 W. 2d So, St.
*Seattle, Wash. 119 Jackson St.
*St. Louis, Mo. 813 Hempstead St.
*San Francisco, Cal. 175 First St.

Plants at Detroit, Mich.; Cleveland, Ohio; Franklin and Erie, Pa.

Foreign Offices and Representatives

Belgium

Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Chile and Bolivia

Santiago, Spencer and Waters, Huerfanos 946, Casilla 627.

China

Shanghai and Tientsin, Allied Machinery Company of America.

Cuba

Havana, The Victor G. Mendoza Co., No. 3 Cuba St.

Finland

Helsingfors, Finska, Aktiebolaget Hartmanns Maskinaffar.

France

Paris, Anciens Etablissements Glaenger & Perreaud, 18-20 Faubourg du Temple.

Germany

Berlin, Internationale Pressluft und Elektrizitäts Gesellschaft m. b. H. Weinmeisterstrasse 14, Berlin, C. 54.

Great Britain

London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Piccadilly, W. 1 (Branches: Aberdeen, Birmingham, Cardiff, Glasgow, Leeds, Newcastle and Belfast.)

Hawaiian Islands

Honolulu, H. S. Gray & Co., 832 Fort Street.

Holland

Rotterdam, Chicago Pneumatic Tool Co., 209 Leuvehaven, W. Z.

Plant: Internationale Pressluft und Elektrizitäts Gesellschaft: Berlin, Germany.
Plant: The Consolidated Pneumatic Tool Company, Ltd., Fraserburgh, Scotland.

Canada

Canadian Pneumatic Tool Company, Ltd.

Canadian Factory 25-27 St. Antoine St., Montreal

The Holden Company, Ltd.

General Sales Representatives for Canada

Montreal, 354 St. James St.

Toronto, Ont., 342 Adelaide St., West.

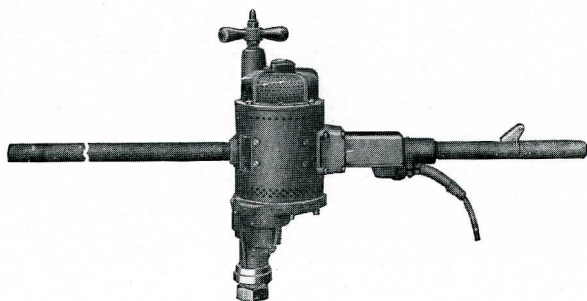
Vancouver, B. C. 81 Pender St. W.

Winnipeg, Man., 150 Princess St.

LITTLE GIANT Electric Drills

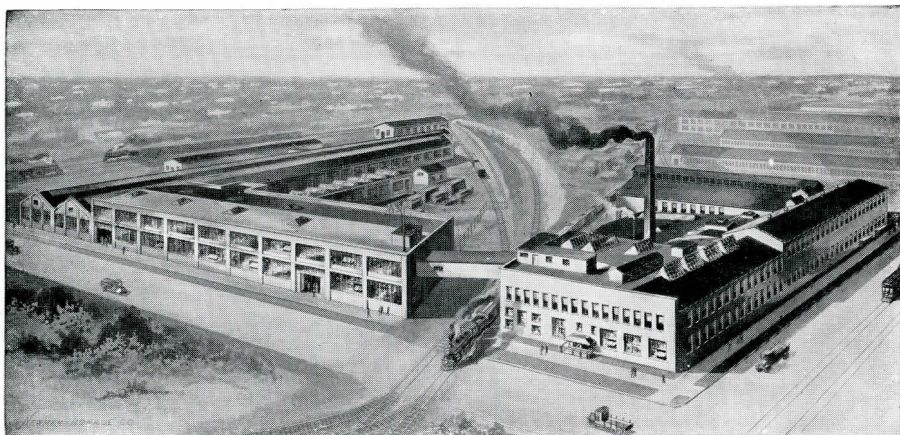
Direct Current

120 and 240 volts



Bulletin 581

Chicago Pneumatic Tool Company
U. S. A.



Plant where Little Giant Electric Tools are made
Erie, Pa.

Foreword

THE heavy duty Electric Drills described in this bulletin were designed to meet the urgent demand for portable Electric Drills that will stand up successfully under the severe usage to which tools of this kind are subjected in industrial plants where rapid work is to be accomplished by comparatively unskilled labor. They are offered by a Company which has had 25 years' experience in building and marketing portable drilling and reaming tools, 15 years of which have been devoted to the designing and building of portable electric tools. This valuable experience has resulted in the perfected Little Giant Electric Drills.

In order to withstand severe usage, the material in Little Giant Drills has been distributed to the utmost advantage and results in large overload capacity, high efficiency, low temperature rise and long life. Among the many points of superiority possessed by these drills the following may be mentioned:

Improved Lubrication Arrangement of bearings and gearing.

Stub Tooth Gears made of high carbon steel carefully tempered.

Ball Bearings of the best grade used throughout.

Quick Acting Switch which makes it impossible for the operator to apply the current slowly or to draw a slow destructive arc when opening the circuit.

Cable Attachment which permits the renewal of cable without disturbing the other parts of the drill.

Safety First Attachment on the larger sizes, which causes the current to be cut off when the operator's hand is removed from the switch control lever.

Accessibility. Little Giant Drills can be dismantled in a fraction of the time required to take apart any other drill on the market. This is an important feature and will be appreciated by all tool room men and reflects favorably in maintenance costs.

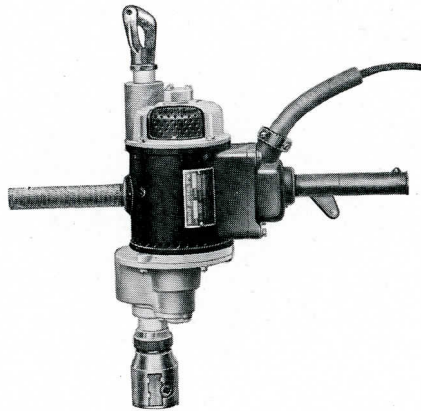
The Osborn Safety Device which effects the almost instant stopping of the drill when the current is shut off, can be furnished at extra cost on the larger sizes of drills. See Bulletin E-63.

If your conditions are in any way unusual or if you have any difficulty in selecting the proper size of drill for your work, our experience is at your service and the Electric Tool Sales Division of this Company will be glad to help you select the best tool.

No. 1B

Little Giant Electric Drill

Direct Current



THIS drill is a standard stock tool wound for 110 or 220 volts. It is adapted for drilling holes in metal up to $\frac{1}{2}$ -inch in diameter. In ordinary grades of wood up to $4\frac{1}{2}$ inches thick, it will bore 1-inch holes and a fine feed double twist bit is recommended. For boring in wood of greater thickness than $4\frac{1}{2}$ -inch, up to 18 inches, it will handle a $\frac{7}{8}$ -inch bit, and a single twist ship auger is recommended.

EQUIPMENT:

Spade handle.
Adjustable chuck, 0 to $\frac{1}{2}$ -inch capacity.
Ten feet of two-conductor cable with Edison connector.

OPTIONAL EQUIPMENT:

Feed screw in place of spade handle.
Breast plate in place of spade handle.
Wood bit chuck for $\frac{1}{2}$ -inch straight round shank augers in place of Adjustable chuck.

No. 1 Morse taper socket to screw onto spindle in place of Adjustable chuck.

CODE WORDS AND FUSES:

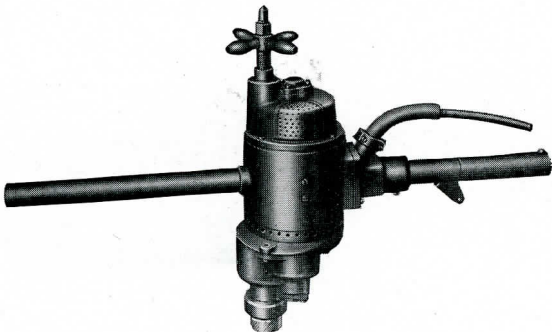
No. 1-B—110 Volts:
Code—Masably.
Fuse Recommended—6-ampere.
No. 1-B—220 Volts:
Code—Masabor.
Fuse Recommended—3-ampere.

GENERAL DATA:

Net weight in pounds.....	21
Overall length spade handle to end of chuck in inches.....	$18\frac{3}{8}$
Overall length breast plate to end of chuck in inches.....	$17\frac{1}{4}$
Shortest length feed screw to end of chuck in inches.....	18
Length of feed, with feed screw in inches	$2\frac{1}{2}$
Minimum distance from housing to center of spindle in inches..	$1\frac{9}{16}$
Free Speed, R. P. M.....	730
Full Load:	
Approximate energy consumption, in watts.....	470
Approximate speed in R. P. M.....	375
Maximum Load for Short Periods:	
Energy consumption, in watts.....	625
Speed in R. P. M.....	320

NOTE: At extra cost this drill can be furnished with special gear case carrying removable No. 1 M. T. Socket, but it is not carried in stock.

No. 1 $\frac{1}{2}$ B
Little Giant Electric Drill
Direct Current



THIS drill is a standard stock tool wound for 120 and 240 volts. It can be furnished with any one of three gear ratios shown below. Gear numbers must be specified when ordering so as to get the drill adapted to the work.

The No. 13 and No. 16 gear ratios are adapted for high speed $\frac{1}{8}$ -inch reaming.

The No. 21 gear ratio is adapted for drilling in metal up to $\frac{3}{4}$ -inch. In ordinary grades of wood up to 4 $\frac{1}{2}$ inches thick it will bore $1\frac{1}{4}$ -inch holes and in thicknesses greater than 4 $\frac{1}{2}$ inches up to 18 inches, it will handle a $1\frac{1}{8}$ -inch fine feed ship auger.

The No. 2 M. T. Socket is used with all size drills regardless of gear ratio.

EQUIPMENT:

- No. 13 and No. 16 gear drill equipped with spade handle.
- No. 21 gear drill equipped with feed screw.
- Removable No. 2 M. T. Socket.
- Fifteen feet two-conductor electrical cable with Edison connector.
- Woodbit chuck for $\frac{1}{2}$ -inch straight round shank augers and spade handle for drills required for wood boring.

GENERAL DATA:

Net weight in pounds.....	32
Overall length spade handle to end of drill socket, inches.....	18 $\frac{3}{4}$
Shortest length feed screw to end of drill socket inches.....	17 $\frac{1}{2}$
Length of feed, with feed screw inches.....	2 $\frac{1}{2}$
Minimum distance from housing to center of spindle.....	1 $\frac{7}{8}$

	No. 13 Gear	No. 1 Gear	No. 21 Gear
Free speed, R. P. M.....	750	595	490
Full Load:			
Approximate energy consumption in watts.....	700	700	700
Approximate speed in R. P. M.....	280	215	165
Maximum Load for Short Periods:			
Energy consumption in watts.....	950	950	950
Speed in R. P. M.....	225	175	130

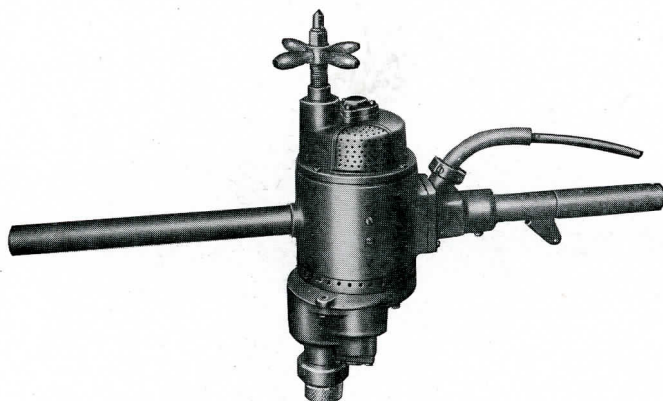
CODE WORDS AND FUSES

120 Volt			240 Volt		
Gear No.	Code	Fuse Recommended	Code	Fuse Recommended	
13	Manhatly	8 amperes	Manhator	4 amperes	
16	Megarly	8 amperes	Megaror	4 amperes	
21	Meteorly	8 amperes	Meteor	4 amperes	

No. 2B

Little Giant Electric Drill

Direct Current



THIS drill with No. 2 M. T. Socket is carried in stock for 120 and 240 volts. It can be furnished either with the No. 16 or the No. 21 gear ratio as indicated.

At extra cost, this drill can be furnished with a gear case carrying a No. 3 M. T. Socket, and equipped with either No. 14 or No. 21 gear ratio, but is not carried in stock.

Drills with No. 16 (No. 2 M. T.) and No. 14 (No. 3 M. T.) gears are especially adapted for heavy $\frac{1}{8}$ -inch reaming. Reaming drills are provided with spade handles.

Drills with No. 21 (No. 2 M. T.) gear are adapted for $\frac{7}{8}$ -inch drilling, and with No. 21 (No. 3 M. T.) gear for 1-inch drilling in metal. In ordinary grades of wood up to $4\frac{1}{2}$ inches thick they will bore $1\frac{1}{2}$ -inch holes and in greater thicknesses than $4\frac{1}{2}$ inches, they will bore $1\frac{3}{8}$ -inch holes with a fine feed auger.

EQUIPMENT:

No. 16 (2 M. T.) and No. 14 (No. 3 M. T.) equipped with spade handle for reaming.

No. 21 (2 M. T.) and No. 21 (No. 3 M. T.) equipped with feed screw for drilling.

No. 16 and No. 21 gear, equipped with removable No. 2 Morse Taper Socket.

No. 14 and No. 21 gear, equipped with removable No. 3 Morse Taper Socket.

Fifteen feet of two conductor electrical cable (with Edison connector).

Wood bit chuck for $\frac{1}{2}$ -inch straight round shank auger and spade handle for wood boring.

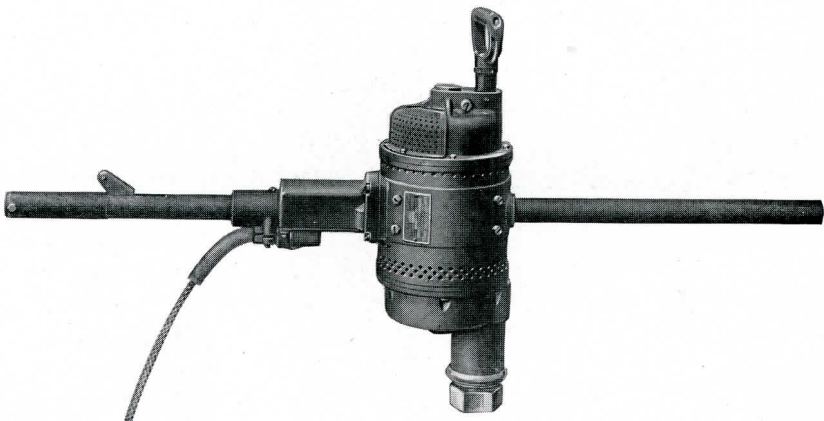
GENERAL DATA:

	No. 2 M. T. Socket		No. 3 M. T. Socket	
	Gear	Gear	Gear	Gear
	No. 16	No. 21	No. 14	No. 21
Net weight in pounds.....	45	45	50	50
Overall length, spade handle to end of socket, inches	19 $\frac{1}{4}$	19 $\frac{1}{4}$	21	21
Shortest length, end of feed screw to end of socket, inches	19	19	20 $\frac{3}{8}$	20 $\frac{3}{8}$
Length of feed, feed screw, inches.....	3	3	3	3
Minimum distance, housing to center of spindle, inches	2	2	1 15/16	1 15/16
Free Speed, R. P. M.....	515	395	580	395
Full Load:				
Approximate energy consumption, watts.....	1200	1200	1200	1200
Approximate speed, R. P. M.....	210	165	235	165
Approximate Load for Short Periods:				
Energy consumption, watts.....	1650	1650	1650	1650
Approximate speed, R. P. M.....	165	135	185	135

CODE WORDS AND FUSES

120 Volts				240 Volts			
		Fuse				Fuse	
Gear No.	Socket No.	Code	Recommended	Code	Recommended	Code	Recommended
16	2 M. T.	Miragly	14 amperes	Miragor	7 amperes	Miragor	7 amperes
21	2 M. T.	Mendosly	14 amperes	Mendosor	7 amperes	Mendosor	7 amperes
14	3 M. T.	Mysorly	14 amperes	Mysoror	7 amperes	Mysoror	7 amperes
21	3 M. T.	Moosly	14 amperes	Moosor	7 amperes	Moosor	7 amperes

No. 3B
Little Giant Electric Drill
Direct Current



THIS drill is a standard stock tool wound for 120 or 240 volts. It is adapted for heavy continuous service and will handle drilling up to 1 1/4 inches and reaming up to 15/16-inch in steel. It can be furnished with either one of two gear ratios as shown below. The No. 15 gear is recommended where drilling only is to be done.

It is equipped with No. 3 Morse taper only.

EQUIPMENT:

- Spade handle or feed screw as specified.
- No. 3 Morse taper removable socket.
- Twenty feet electrical cable (no socket).

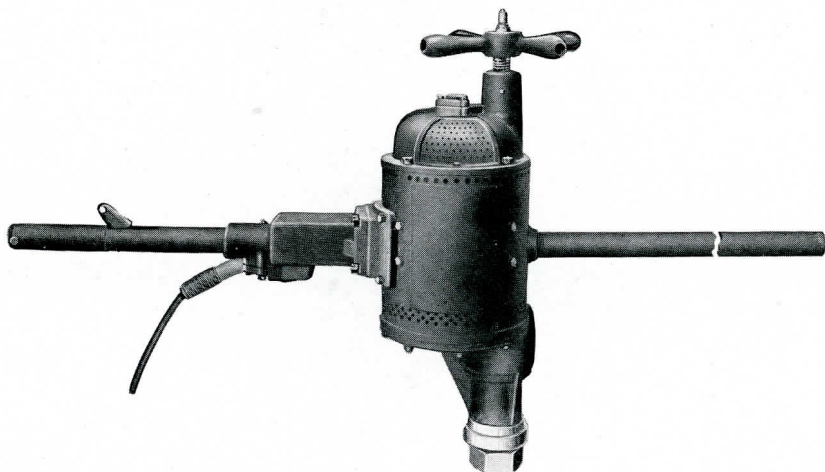
	With No. 11 Gear	With No. 15 Gear
GENERAL DATA:		
Net weight, in pounds.....	68	68
Shortest length, end of feed screw to end of spindle, in inches.	21 1/2	21 1/2
Length of feed available with feed screw, in inches.....	3 1/2	3 1/2
Minimum distance from housing to center of spindle, in inches	1 3/4	1 3/4
Free speed, R. P. M.....	485	370
Full Load:		
Approximate energy consumption, in watts.....	2100	2100
Speed in R. P. M.....	250	175
Maximum Load for Short Periods:		
Energy consumption, in watts.....	2300	2300
Speed in R. P. M.....	200	150

120 Volts			240 Volts		
		Fuse			Fuse
Gear No.	Code	Recommended	Code	Recommended	
11	Mantolly	20-ampere	Mantolor	10-ampere	
15	Mantudly	20-ampere	Mantudor	10-ampere	

No. 4B

Little Giant Electric Drill

Direct Current



THIS drill is a standard stock tool wound for 120 or 240 volts. It is adapted for heavy continuous service and will handle drilling up to $1\frac{3}{4}$ inches and reaming up to $1\frac{3}{16}$ inches in steel. It can be furnished regularly with any one of the three gear ratios shown below. The No. 21 gear is recommended where drilling only is to be done. It is furnished in the side spindle type only and with No. 4 Morse taper socket.

EQUIPMENT:

- Spade handle or feed screw as specified.
- No. 4 Morse taper removable socket.
- Twenty feet electrical cable (no socket).

GENERAL DATA:

	With No. 13 Gear	With No. 17 Gear	With No. 21 Gear
Net weight in pounds.....	94	94	94
Shortest length, end of feed screw to end of spindle, in inches	24	24	24
Length of feed available with feed screw, in inches...	$3\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{2}$
Minimum distance from housing to center of spindle, in inches	2	2	2
Free Speed, in R. P. M.....	315	270	205
Full Load:			
Approximate energy consumption, in watts.....	3100	3100	3100
Speed, in R. P. M.....	195	145	115
Maximum Load for Short Periods:			
Energy consumption, in watts.....	4800	4800	4800
Speed, in R. P. M.....	175	120	100

CODE WORDS AND FUSES

120 Volts

240 Volts

Gear No.	Code	Fuse Recommended	Code	Fuse Recommended
13	Marshallly	30-ampere	Marshalor	15-ampere
17	Marvelly	30-ampere	Marvelor	15-ampere
21	Mascodly	30-ampere	Mascodor	15-ampere

Care of Little Giant Electric Drills

It is of vital importance to have portable electric drills in first-class operating condition at all times and this can be accomplished by the exercise of a little care and attention. When the customer's plant is provided with a tool room, it is desirable to have the tools sent there occasionally to be looked over and if necessary put in the best possible condition. It is to be expected that natural wear of the brushes and commutators will take place; therefore, these parts should be looked at occasionally.

In order to assist in the care of electric drills, the following suggestions may be of benefit:

Lubrication: The gears of Little Giant Electric Drills are intended to run in grease and an opening in the gear case is provided for its insertion. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the drills are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears and bearings. We have found non-fluid oil, grade F-2 very satisfactory on the ball bearing type of Little Giant Drills. All of the bearings in the Type B Little Giant Drills are of the ball type and care should be taken to see that these bearings are supplied with the necessary grease for lubricating as outlined above.

Commutator and Brushes: Commutator and brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the clock-spring type, which give a uniform pressure through a wide range, so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sandpaper in cleaning the commutator. Never use emery cloth.

Ventilation: When the drills are being examined in the tool room, it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt, instead of pushing it into the machine.

Switch: The switch furnished with the Little Giant Electric Drill is of the quick-acting type and especially designed for these tools. We believe that it is the best switch ever produced for portable electric tools. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals. The switch contacts should be examined and cleaned occasionally. Under normal conditions of operation there should be no destructive arcing at the switch and the contacts will last for a long time.

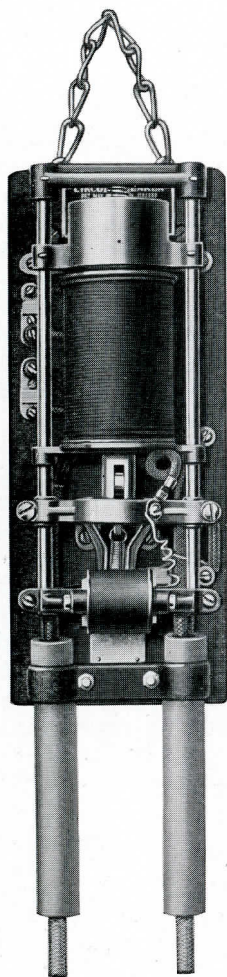
Cable: Little Giant Drills are furnished with a very high-grade electric cable, manufactured especially for tools of this character. Do not permit your workmen to drag the drills around by the cable or to drop heavy pieces on it.

Feed Screws: Do not use feed screws other than those furnished by this Company. A longer feed screw than our standard is apt to give trouble by being screwed down too far, thus breaking through the feed screw shield and cutting into the windings.

It will repay you to follow the above suggestions.

Little Giant Self-Setting Circuit Breaker

(Patented May 16, 1916)



This Circuit Breaker, which possesses many novel features, was designed for use with Little Giant electric tools, not only as a protection to the tools, but as a protection to the workmen as well. It may be placed anywhere in the drill circuit, as the self-setting feature makes its proximity to the tool unnecessary. The breaker is provided with two two-conductor cables, which are interchangeable so far as their connection to the line and the tool is concerned, thus obviating any special precautions in making connection. The circuit from the tool to the breaker is made by means of the ordinary two-conductor cable with which all Little Giant direct current tools are provided.

The breaker operates on the solenoid principle, with a series coil to open the circuit at a predetermined point and an air-actuated dash pot to prevent the opening of the circuit when the momentary rush of current occurs at the time of starting the tool. Liberal arcing space is provided and a magnetic blow-out disrupts the arc quickly and effectively. A shunt coil which provides magnetic flux for the blow-out also serves to hold the breaker open as long as the switch on the tool is left in. When this switch is released by the operator the breaker resets itself ready to start the tool as soon as the switch is thrown in again. The resetting of the breaker is so nearly instantaneous that very little time is lost when an overload does occur, causing the breaker to open; nevertheless, the operator soon learns just how much load he can apply without opening the breaker, and the result is that the tool is operated to its maximum capacity practically all of the time without endangering the windings of the drill.

The base of the Circuit Breaker is 5 inches wide by 12 inches long, and the entire mechanism is provided with a substantial pressed steel cover to protect it from injury. A chain is provided at the upper end so that it may be suspended at any convenient place.

The Little Giant Self-Setting Circuit Breaker is made for direct current only, and in capacities to take care of the No. 2-B Little Giant Drill and larger.

Important

A record is maintained of every electric drill sold by the Chicago Pneumatic Tool Company. When ordering repair parts, give the serial number as well as the size and voltage of the tool for which they are required. This will insure furnishing the correct parts as well as facilitate quick delivery. Accurate interchangeability is maintained on drills of the same size and type.

If any of your tools are lost or stolen, write us giving the serial number, and we can probably locate them sooner or later when they may come in for repairs.

An efficient Service Department is maintained at all of our principal offices, for the benefit of our customers.

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Chicago Pneumatic
Building



6 East 44th Street
New York, U.S.A.

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*San Francisco, Cal. 175 First St.

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Helsingfors, Finska, Aktiebolaget Hartmanns Maskinaffar.

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Holland

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Italy

Milan, The Consolidated Pneumatic Tool Co., Ltd., Via A. Cappellini 7.

India

Bombay, The Consolidated Pneumatic Tool Co., Ltd., Pathe Bldg., Ballard Pier, Fort.

Japanese Empire

Osaka, Seoul, Tokyo, Horne Co., Ltd. (New York address: 51 Chambers St., N. Y.)

Northern Mexico

(Chihuahua) D. A. Carpenter & Co., El Paso, Texas.
(Sonora and Sinaloa) Chicago Pneumatic Tool Co., Los Angeles, Cal.

Norway

Christiania, A/S. G. Hartmann, P. O. Box 1.

Scotland

Fraserburgh, The Consolidated Pneumatic Tool Co., Ltd.

South Africa

Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.

South America

Argentina, Buenos Aires; Evans, Thornton & Co., Calle Defensa, 465.
Brazil—(Rio de Janeiro and Sao Paulo Districts), M. Almeida & Cia. Rua Quitanda, 15, Rio de Janeiro. Rua Assembléa, 40, Sao Paulo.
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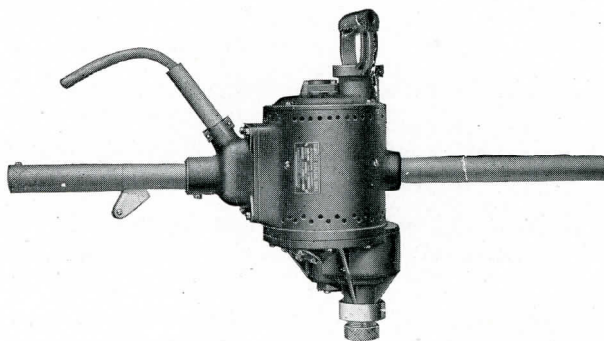
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LITTLE GIANT

Electric Drills

Alternating Current

Two and Three Phase



Bulletin E-58

Chicago Pneumatic Tool Company
U. S. A.

Foreword

THE Little Giant Electric Drills described in this bulletin are built for operation on Two or Three Phase Alternating Current Circuits of 60, 40 or 25 cycles. The motors are of the induction type, and, of course, possess the advantage of having no commutator or brushes, the rotor being of the short circuited type and practically impossible to burn out.

These tools can not be operated from a lamp socket connection, but must be connected to the three or four power wires of a Three Phase or Two Phase Circuit, as the case may be, a suitable cable being provided on the drill for this purpose. If tools for lamp socket connection on alternating current are desired, see our bulletin on Universal Drills.

The material in these drills is distributed to the utmost advantage, resulting in large overload capacity, high efficiency (which also means low temperature rise) and long life. Among the important features which have made Little Giant Alternating Current Drills so satisfactory may be mentioned:

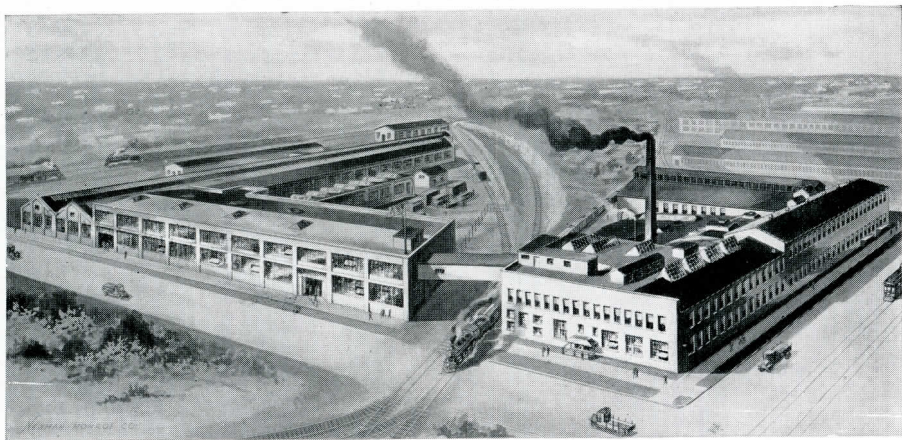
Improved Lubrication of bearings and gearings.

Stub Tooth Gears made of steel, carefully tempered.

Cable Attachment which permits renewal of cable without disturbing the other parts of the tool.

Improved Quick Acting Switch which makes it impossible for the operator to apply the current slowly or to draw a slow, destructive arc when opening the circuit.

Safety First Attachment on the larger sizes, which causes the current to be cut off when the operator's hand is removed from the switch contact lever.

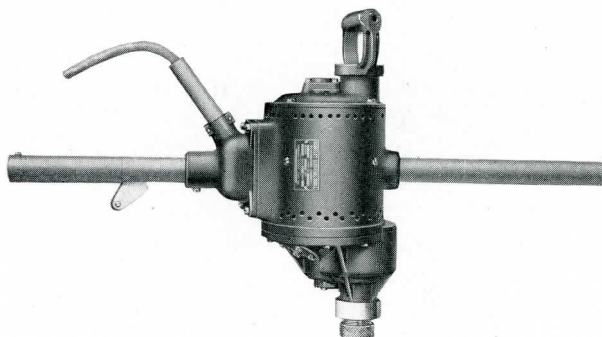


Plant where Little Giant Electric Tools are made
Erie, Pa.

No. 1 $\frac{1}{2}$ B

Little Giant Electric Drill

Alternating Current



THIS drill is regularly furnished wound for 60 cycles but can be built for 50 or 40 cycles on order.

Cycles	Gear No.	R. P. M.		Drilling Capacity	
		No Load	Full Load	Metal	Wood
60	16	225	203	$\frac{3}{4}$ inch	1 $\frac{1}{2}$ inch

EQUIPMENT:

Spade handle or feed screw as specified.

Fifteen feet of electrical cable.

Note: Standard drills are non-reversible. Reversible drills can be furnished at extra cost.

GENERAL DATA:

Net weight, in pounds.....	32
Over all length with feed screw (screwed in) in inches.....	19
Over all length with spade handle in inches	16
Length of feed in inches.....	2 $\frac{1}{2}$
Minimum distance, housing to center of spindle, in inches....	1 $\frac{7}{8}$

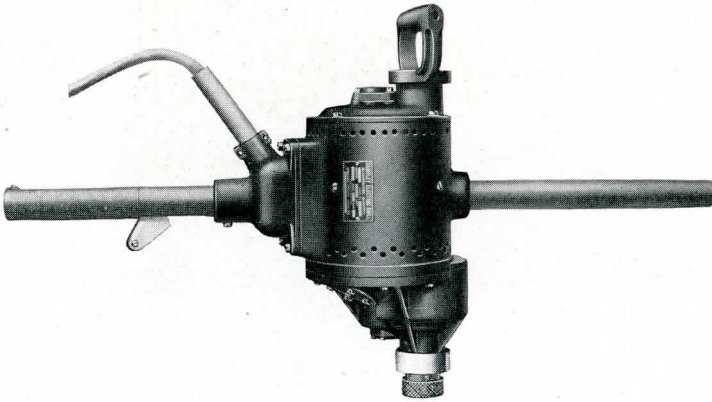
CODE WORDS—TWO PHASE				
Cycles	Gear No.	120 volts	240 volts	440 volts
60	16	Dunalbly	Dunalbor	Not furnished

CODE WORDS—THREE PHASE				
Cycles	Gear No.	120 volts	240 volts	440 volts
60	16	Trinalbly	Trinalbor	Not furnished

No. 2B

Little Giant Electric Drill

Alternating Current



THIS drill is built with three gear combinations, two of which are shown below, for 60 and 25 cycles. It can also be built for 50 or 40 cycles on order.

Cycles	Gear No.	R. P. M.		Drilling Capacity	
		No Load	Full Load	Metal	Wood
60	21	166	160	$\frac{7}{8}$ inch	$1\frac{3}{4}$ inch
25	12	122	107	$\frac{5}{8}$ inch	$1\frac{1}{4}$ inch

EQUIPMENT:

Spade handle or feed screw as specified.

No. 2 Morse Taper removable socket.
Fifteen feet electrical cable.

Note: Standard drills are non-reversible. Reversible drills can be furnished at extra cost.

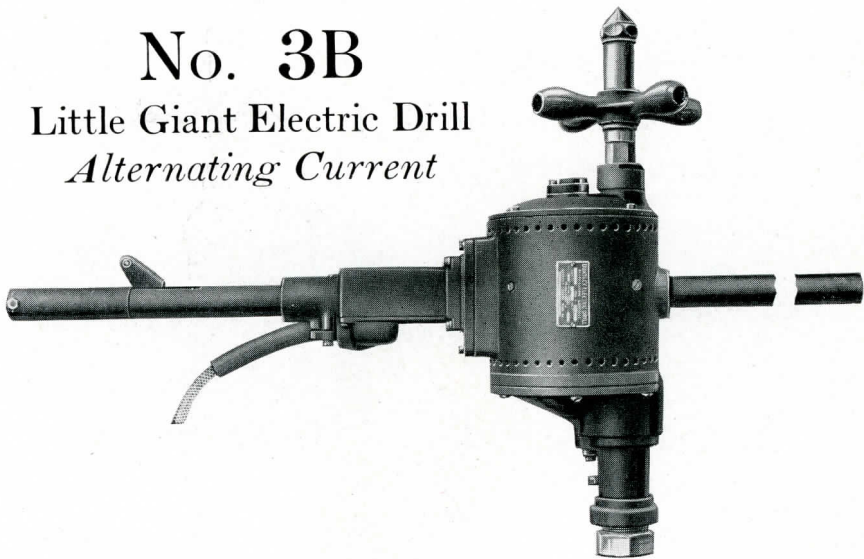
GENERAL DATA:

Net weight, pounds.....	45
Over all length with feed screw (screwed in) in inches.....	22
Over all length with spade handle, in inches.....	$18\frac{1}{8}$
Length of feed available, in inches	$2\frac{1}{2}$
Minimum distance, housing to center of spindle, in inches...	$1\frac{1}{8}$

CODE WORDS—TWO PHASE					
Cycles	Gear No.	120 volts	240 volts	440 volts	
60	21	Dunaberly	Dunaberor	Dunaberlic	
25	12	Depnaberly	Depnaberor	Not furnished	

CODE WORDS—THREE PHASE					
Cycles	Gear No.	120 volts	240 volts	440 volts	
60	21	Trinaberly	Trinaberor	Trinaberlic	
25	12	Townaberly	Townaberor	Not furnished	

No. 3B
Little Giant Electric Drill
Alternating Current



THIS drill is built so that any one of three gear combinations can be used to adapt it to the various cycles and furnish proper spindle speed as shown in the table below. It can also be built for 50 or 40 cycles, on order.

		R. P. M.		Capacity in Metal		Capacity in
Cycles	Gear No.	No Load	Full Load	Drilling	Reaming	Wood
60	*17	202	180	1¼ inch	15-16 inch	2½ inch
60	13	280	249	1⅝ inch	13-16 inch	2¼ inch
25	13	116	110	1⅝ inch	13-16 inch	2¼ inch
25	*11	128	121	1 inch	11-16 inch	2 inch

*Note: These gears are recommended as being best adapted for general all around work.

EQUIPMENT:

- Spade handle or feed screw as specified.
- No. 3 Morse Taper removable socket.
- Twenty feet electrical cable.

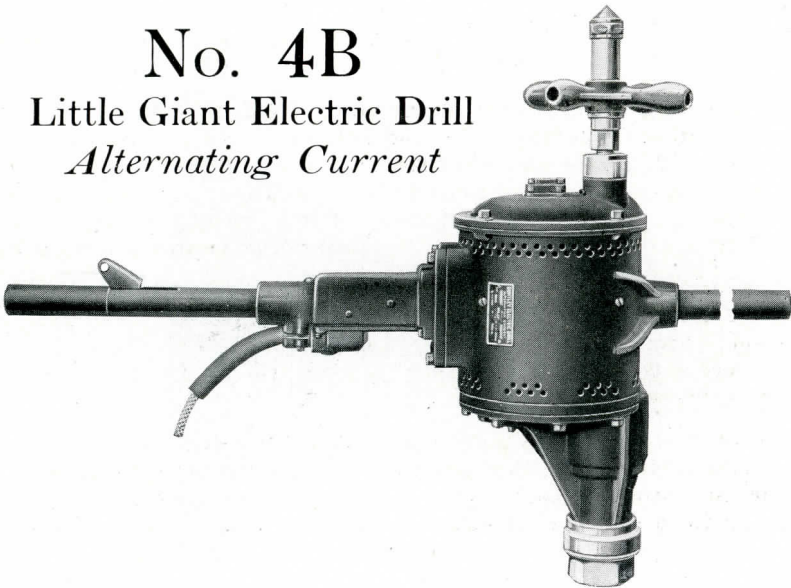
Note: Standard drills are non-reversible. Reversible drills can be furnished at extra cost.

GENERAL DATA:

- Net weight, in pounds..... 68
- Over all length with feed screw (screwed in), in inches..... 22¾
- Over all length with spade handle, in inches..... 18¾
- Length of feed available, in inches 3
- Minimum distance, housing to center of spindle, in inches.... 2

		CODE WORDS—TWO PHASE		
Cycles	Gear No.	120 volts	240 volts	440 volts
60	17	Dunagebly	Dunagebor	Dunagebic
60	13	Dunahowly	Dunahowor	Dunahowic
25	13	Depnahowly	Depnahowor	Not furnished
25	11	Depnakinly	Depnakinor	for 440 volts
		CODE WORDS—THREE PHASE		
Cycles	Gear No.	120 volts	240 volts	440 volts
60	17	Trinagebly	Trinagebor	Trinagebic
60	13	Trinahowly	Trinahowor	Trinahowic
25	13	Townahowly	Townahowor	Not furnished
25	11	Townakinly	Townakinor	for 440 volts

No. 4B
Little Giant Electric Drill
Alternating Current



THIS drill is built so that any one of three gear combinations can be used to adapt it to the various cycles and furnish proper spindle speed as shown in the table below. It can also be built for 50 or 40 cycles, on order.

Cycles	Gear No.	R. P. M.		Capacity in Metal		Capacity in
		No Load	Full Load	Drilling	Reaming	Wood
60	*23	150	135	1 3/4 inch	1 3-16 inch	3 1/4 inch
60	17	208	185	1 1/2 inch	1 1-16 inch	3 inch
25	17	86	82	1 1/2 inch		
25	*13	115	109	1 5/8 inch	15-16 inch	2 1/2 inch

*Note: These gears are recommended as being best adapted for general all around work.

EQUIPMENT:

- Spade handle or feed screw as specified.
- No. 4 Morse Taper removable socket.
- Twenty feet electrical cable.
- Note: Standard drills are non-reversible. Reversible drills can be furnished at extra cost.

GENERAL DATA:

- Net weight, in pounds..... 94
- Over all length with feed screw (screwed in), in inches..... 24 1/2
- Over all length with spade handle, in inches..... 20 1/2
- Length of feed available, in inches 3
- Minimum distance, housing to center of spindle, in inches.... 3 3/8

		CODE WORDS—TWO PHASE	
Cycles	Gear No.	120 volts	240 volts
60	23	Duneatly	Duneator
60	17	Dunicely	Duniceor
25	17	Depnicely	Depniceor
25	13	Depnampsly	Depnampsor
		440 volts	Duneatic
			Duniceic....
			Not furnished
			for 440 volts
		CODE WORDS—THREE PHASE	
Cycles	Gear No.	120 volts	240 volts
60	23	Trineatly	Trineator
60	17	Trinicely	Triniceor
25	17	Townicely	Towniceor
25	13	Townampsly	Townampsor
		440 volts	Trineatic
			Triniceic
			Not furnished
			for 440 volts

Care of Little Giant Alternating Current Drills

IT IS absolutely essential that the circuits to the drill be intact. If one line is open either in the power line, the drill cable or the switch contacts, the tool will not operate when the switch is thrown in, but will emit a buzzing sound, indicating that only one phase of the line current is flowing through the stator windings. The switch should immediately be opened (otherwise the stator windings may be burned out) and the open circuit located and repaired.

It frequently happens when a two or three phase drill is connected to the line for the first time that it will run in the reverse direction. This can be rectified by simply transposing any two of the three wires of the three phase drill cable or reversing one phase of the two phase drill at the end of the cable, where it connects to the line.

It is of vital importance to have portable electric drills in first-class operating condition at all times, and this can be accomplished by the exercise of a little care and attention on the part of the operators. When the customer's plant is provided with a toolroom, it is desirable to have the tools sent there occasionally to be looked over and, if necessary, put in the best possible condition.

It is to be expected that natural wear of the bearings will take place, therefore, these should occasionally be examined.

In order to assist in the care of electric drills, the following suggestions may be of benefit:

Lubrication: The gears of Little Giant electric drills are intended to run in grease and an opening in the gear case is provided for its insertion. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the drills are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears.

Little Giant alternating current drills are equipped with ball bearings throughout. The rotor bearings are covered with a removable cap arranged to hold a supply of non-fluid oil, the same as is used in the gear case for lubricating the gearing. We recommend No. F2 non-fluid oil.

Ventilation: When the drills are being examined it is a good plan to clean out the air holes in the housing. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

Switch: The switch furnished with the Little Giant drill is of the quick-acting type and should be cleaned occasionally. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals.

Cable: Do not permit your men to drag the drills around by the cable.

It will repay you to follow the above suggestions.

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Chicago Pneumatic
Building



6 East 44th Street
New York, U. S. A.

Branch Offices and *Service Stations

*Birmingham, Ala. 1925 No. 5th Ave.
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*Cleveland, Ohio. 109 St. Clair Ave., N.E.
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*Seattle, Wash. 119 Jackson St.
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*San Francisco, Cal. 175 First St.
Tucson, Ariz. 40 Scott St.

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Cuba

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France

Paris, Anciens Etablissement, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Germany

Berlin, Internationale Pressluft und Elektricitats Gessellschaft m. b. H.

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London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Picadilly, W. I.

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Italy

Milan, The Consolidated Pneumatic Tool Co., Ltd., Via A. Capellini 7.

India

Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Japanese Empire

Osaka, Seoul, Tokyo, Horne Co. Ltd. (New York address: 51 Chambers St., N. Y.)

Northern Mexico

(Chihuahua) D. A. Carpenter & Co., El Paso, Texas.
(Sonora) Chicago Pneumatic Tool Co., Tucson, Ariz.

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Christiania, Scandinavia, A. G. Hartman, Box No. 1.

Portugal

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Spain

Barcelona, Cadiz, Madrid; American Machinery Syndicate.
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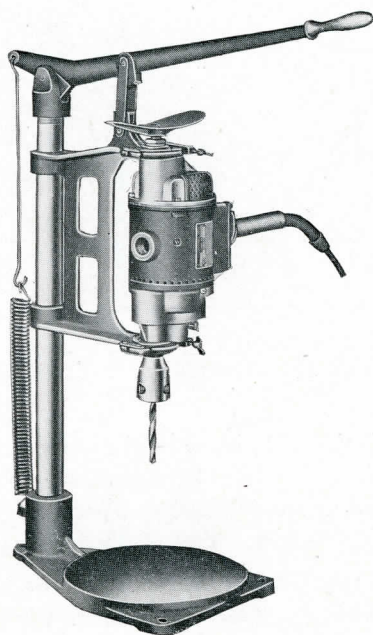
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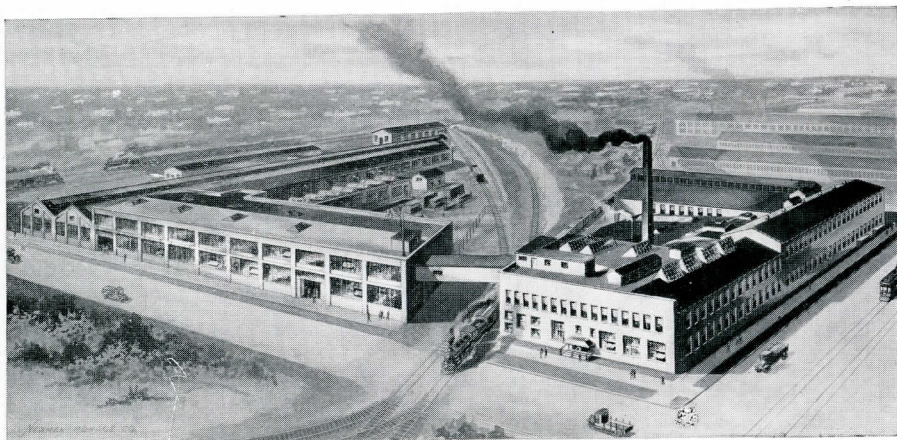
LITTLE GIANT

Electric Drilling Stands



Bulletin E-59

Chicago Pneumatic Tool Company
U. S. A.



Plant where Little Giant Electric Tools are made
Erie, Pa.

Little Giant Electric Drilling Stands

THIS stand was designed to increase the scope of the work that might be accomplished by Little Giant Electric Drills, by providing a frame and base plate which virtually makes a drill press out of the ordinary portable drill, while not impairing its usefulness as a portable tool.

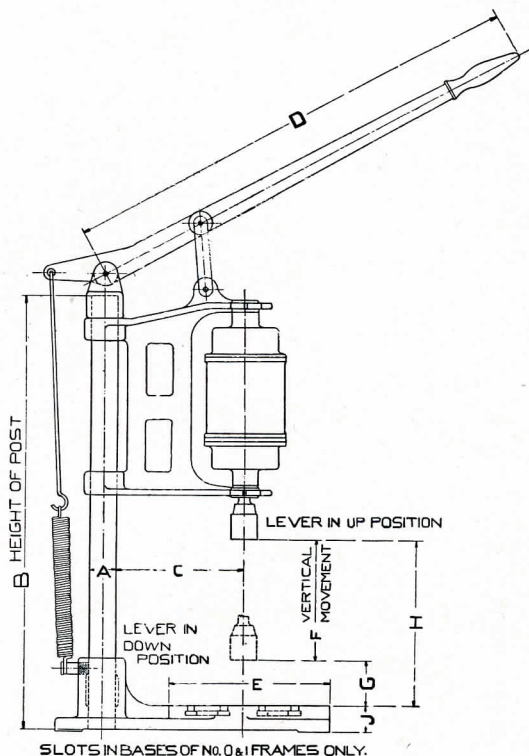
The stand is strong and substantially made throughout and is intended for accurate drilling. The weight of the drill and drill arm is counterbalanced by means of a spring, and a key or feather in the movable bracket keeps the drill in vertical alignment and insures the drilling of straight holes.

The larger sizes are provided with tee slots in the base plate so that the work may be bolted down if desired.

It is built in five sizes to take the standard Little Giant electric drills of either the universal or direct current types (see drill bulletins) ranging in drilling capacity of from 3-16 to $\frac{1}{2}$ -in. in metal.

The drill itself is held in place by two clamping straps, shown in the cut, secured by screws and thumb nuts, allowing it to be removed in a few seconds and used as a portable drill.

General Dimensions of Stand



SIZE No. ELECTRIC DRILL	No. 000	No. 000X	No. 00	No. 0B	No. 1B
Drilling Capacity in Metal	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
A	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	$1\frac{5}{8}$
B	19	21	$23\frac{3}{8}$	$24\frac{7}{8}$	$26\frac{13}{16}$
C	$5\frac{3}{8}$	$5\frac{3}{8}$	$5\frac{3}{8}$	$7\frac{3}{16}$	$7\frac{3}{16}$
D	$14\frac{1}{16}$	$14\frac{1}{16}$	$14\frac{1}{16}$	$26\frac{1}{8}$	$26\frac{1}{8}$
E	8	8	8	10	10
F	$4\frac{3}{8}$	$4\frac{1}{2}$	$4\frac{13}{16}$	$5\frac{1}{2}$	$5\frac{3}{4}$
G	$4\frac{3}{8}$	$5\frac{1}{4}$	$3\frac{3}{4}$	$3\frac{5}{8}$	4
H	$8\frac{3}{4}$	$9\frac{3}{4}$	$8\frac{9}{16}$	$9\frac{1}{8}$	$9\frac{3}{4}$
J	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$
Weight in lbs. of Stand Only	$16\frac{1}{2}$	17	$19\frac{1}{2}$	44	$46\frac{1}{2}$
Code Word Stand Only	Madros	Magique	Mainote	Maday	Matime

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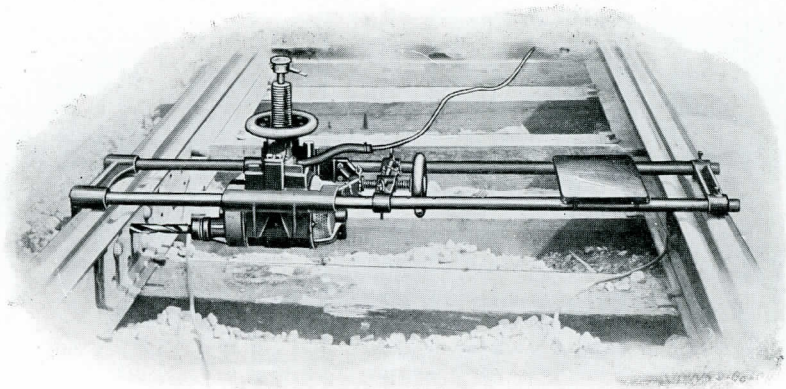
LITTLE GIANT

Electric Tools

for

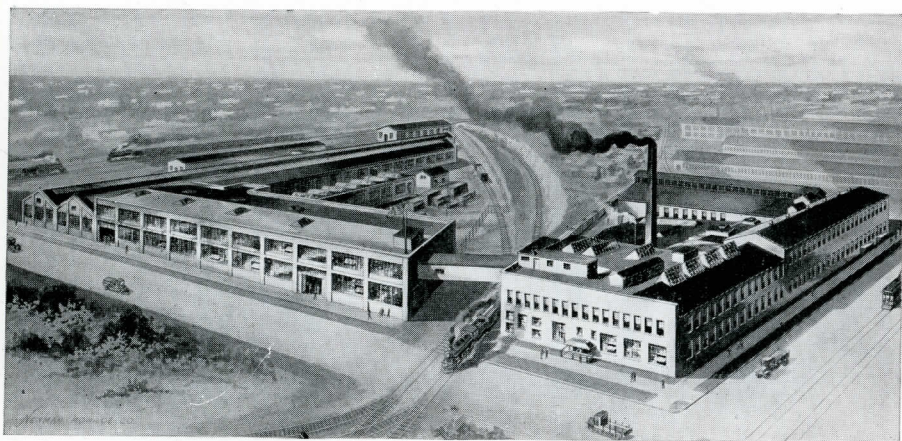
Street and Interurban Railways

600 Volt—Direct Current



Bulletin E-60

Chicago Pneumatic Tool Company
U. S. A.



Plant where Little Giant Electric Tools are made
Erie, Pa.

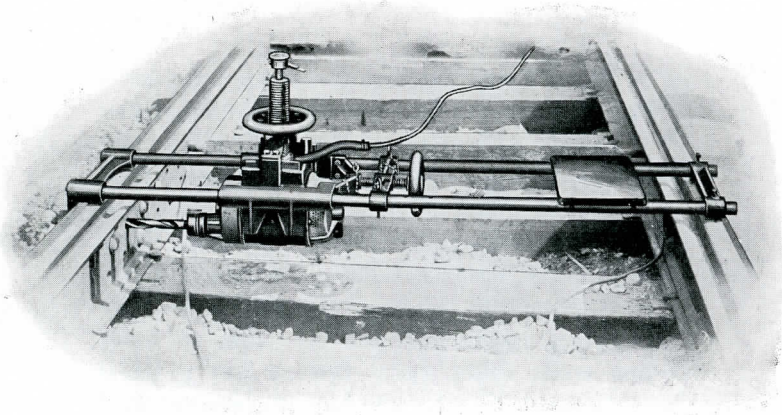
Foreword

STREET and Interurban Railways require a class of portable electric tools for bonding which, on account of the high voltage and rough usage encountered in service, require most careful design and construction if sustained low maintenance and long life are to be attained. Practically every electric railway company in the United States is familiar, through exceedingly satisfactory experience, with the line of Little Giant track drills, spike drivers and grinders manufactured by the Chicago Pneumatic Tool Company.

These tools are unique in that they are especially adapted to every requirement of their particular field and many users have expressed themselves as being unwilling to go back to methods previously employed with resultant loss of time and money.

Little Giant Track Drills *600 Volt Direct Current*

Patented Nov. 24, 1914



THIS is our standard type of track drill, built for rapid work in rail bonding, drilling tie and joint holes and for reaming joint holes. It is built in three sizes as listed.

It will be noted that the frame does not bolt to the track, but is simply hooked over the rail to be drilled, the operator holding down the other end of the frame by sitting on the seat provided, which brings him into a convenient position to operate the feed. The side spindle feature of the drill permits drilling close to the ties without the use of an angle attachment, and the vertical adjusting screw, with guides for the drill, affords ready means for locating the holes vertically on ordinary tee or deep girder rails. The horizontal rods are of heavy seamless drawn tubing, and the bearing surface of the drill guides on the rods is very long, insuring true, straight holes so essential for efficient bonding. The cross bar carrying the feed nut is located on the horizontal rods by means of eye pins which are easily withdrawn for the rapid removal of the bit from the rail after drilling the hole, or for sharpening the drill bits. A series of holes in the horizontal rods provides means of accommodating varying lengths of bits. The drill motor itself can be removed from the frame by taking out four cap screws, and it can then be used as an independent portable tool.

Little Giant Track Drills

Continued

FOR drilling bond and joint holes on the tracks of electric railways, the No. 4 drill, as listed below, is recommended, as it is more powerful and capable of doing more rapid work. It is equipped with an inter-pole motor capable of withstanding very heavy loads without distress.

EQUIPMENT OF LITTLE GIANT TRACK DRILLS:

Two twenty-foot lengths of single conductor cable tagged "Ground" and "Trolley," respectively.

Morse Taper Socket as indicated. (The No. 4 drill can be furnished with No. 4 Morse Taper socket if specified without extra cost.)

Plain Chuck (provided with set screw) to take round shank flat track bits with $\frac{5}{8}$ inch uniform round shanks.

Note: Special chucks, as may be specified, can be furnished at extra cost.

All track drills are built for the standard 4 ft. 8½ in. gauge track and are so furnished unless otherwise specified. We can furnish Track Drills for special gauges on order.

Size	Drilling Capacity in Metal	Morse Taper Socket	Weight in Lbs.	Speed at Full Load	Code Words
No. 2 Track Drill	$\frac{3}{4}$ in.	No. 2 M. T.	90	250	MAUNIC
No. 3 Track Drill	1 in.	No. 3 M. T.	140	150	MODIC
No. 4 Track Drill	1½ in.	No. 3 M. T.	185	80	MATRIC

We can furnish the above track drills wound for direct current of 110 to 250 volts; also for two or three phase 60 cycle alternating current in voltages from 110 to 440.



Scene showing Five Little Giant Electric Track Drills reaming joint holes on the tracks of the Pittsburgh Railways Company

Little Giant Screw Spike Drivers *600 Volt Direct Current*

Patented July 4, 1911



THE preservation of wooden railway ties has received a great deal of attention in recent years and one of the most important results of this has been the introduction of the screw spike. This spike is admittedly far superior to the nail spike in holding power (about four times) as well as in the absence of any tendency to mutilate the fibres of the tie, which assists decay.

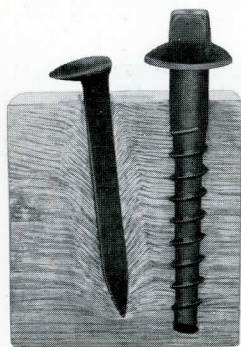
Several years ago we brought out a special electrically operated portable tool for driving screw spikes and we believe the problem of successfully and economically accomplishing this work has been solved. The Chicago Surface Lines successfully drove all of the spikes used in the rehabilitation of their lines with these tools. Many other roads have since adopted them.

The Little Giant Spike Driver is a powerful rotary electric tool operating in conjunction with a specially designed circuit breaker whose function is to open the circuit when the spike is screwed home. This special breaker is described on page 7.

The Spike Drivers are built in two sizes as shown on page 7 and require an operator and a helper to take care of the heavy torque developed at the instant of maximum effort when the head of the spike is forced against the base of the rail. At this instant the circuit breaker opens the circuit and the tool stops turning. It is obvious that all of the spikes will be driven to the same tension against the base of the rail, thus insuring perfect and uniform holding power throughout the track.

On electric roads the current is taken from the trolley or third rail as the case may be.

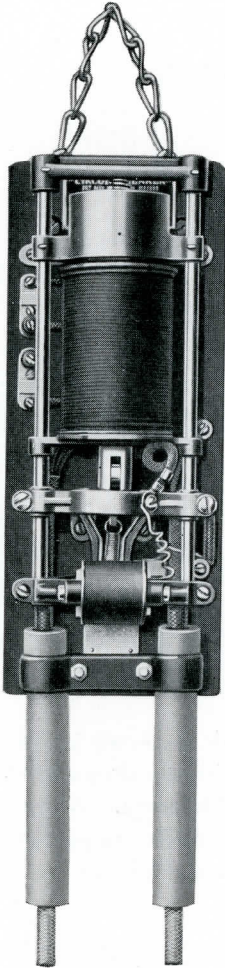
Cut showing relative distortion of wood fibres by screw spike and ordinary spike.



Note: Little Giant Drivers can also be furnished for 110 to 250 volts direct current.

Little Giant Screw Spike Drivers

Continued



Circuit Breaker
with cover removed
Patented May 16, 1916

THE self-setting breaker which is furnished in connection with the Little Giant Spike Driver, is shown in the accompanying cut with the protecting cover removed. It is usually mounted on a pole by the users, one line of the circuit running to a hook in the top of the pole for hooking over the trolley wire. A polarity receptable is mounted at the lower end of the breaker (not shown in cut) to provide easy connection to the spike driver which is provided with a twenty-foot cable terminating in a suitable plug.

A great advantage of this circuit breaker is that only two conductors are required between it and the spike driver. These are usually furnished in one cable.

The breaker operates on the solenoid principle, with a series coil to open the circuit at a predetermined point and an air-actuated dash pot to prevent the opening of the circuit when the momentary rush of current occurs at the time of starting the tool. Liberal arcing space is provided and a magnetic blow-out disrupts the arc quickly and effectively. A shunt coil which provides magnetic flux for the blow-out also serves to hold the breaker open as long as the switch on the tool is left in. When the switch is released by the operator the breaker resets itself instantaneously, ready to start the tool as soon as the switch is thrown in again. The Spike Driver, of course, will not start again until the operator voluntarily throws in the switch on the handle of the tool.

The base of the circuit breaker is 5 inches wide by 16 inches long and the entire mechanism is protected by a substantial steel cover.

EQUIPMENT OF LITTLE GIANT DRIVERS:

Twenty feet electrical cable on tool terminating in two pole polarity plug (one conductor for trolley side and one for ground side of line).

One Little Giant circuit breaker with receptable for plug on tool cable.

One socket wrench to fit standard spike. (Samples of spikes to be driven should be submitted).

Spade handle for spike driver.

CAPACITY AND CODE

	Maximum Size of Spike	Code Words (600 Volts)
No. 3 Spike Driver	$\frac{3}{4}$ -in.	MUSTERIC
No. 4 Interpole Spike Driver.....	1-in.	MIGRATIC

Nos. 1½, 2, 3 and 4

Little Giant Portable Electric Drills

600 Volt Direct Current



LITTLE GIANT 600-volt drills are built in four sizes as shown in table below. All sizes are furnished with the extra pipe handle shown at the right of the cut, this being removable for close side work. A spade handle, or if desired, a feed screw can be furnished. The drills are provided with two cables, one for the trolley connection and the other for the rail or ground.

It is recommended that the No. 3 drill be always used for bonding of 7/8-in. and the other sizes for shop or car barn work up to their capacities.

Size	Drilling Capacity		Morse Taper Socket	Weight Pounds	Speed at Full Load		Code Words
	Steel	Wood					
No. 1½ B.	5/8 in.	1¼ in.	No. 2	32	200		Meteoric
No. 2 B.	¾ in.	1½ in.	No. 2	45	175		Martialic
No. 3 B.	1 in.	2 in.	No. 3	64	150		Mahlenic
No. 4 Interpole	1½ in.	3 in.	*No. 4	90	80		Malayic

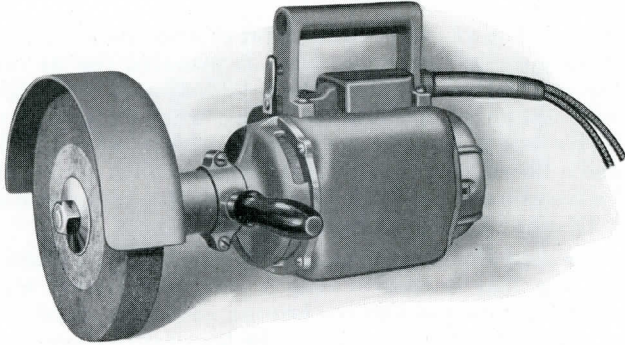
*No. 3 M. T. Socket can be furnished if desired.

Note: We can furnish the No. 3 Boyer Angle Gear for use in connection with the No. 3 drill. This measures 8¼ inches from end of feed screw to end of socket. Code word, Abrocharic.

No. 8 B-P

Little Giant Portable Electric Grinders

600 Volt Direct Current



THIS grinder which has been on the market for several years, and of which there are a great many in service, carries a 6-in. x 1 $\frac{1}{4}$ -in. x $\frac{5}{8}$ -in. emery wheel at a speed of 2400 RPM. It is provided with a heavy armature shaft carrying the emery wheel at its outer end. This shaft is mounted on three high grade ball bearings surrounded by large oil retaining cavities. The electrical and mechanical features are in accordance with most approved modern practice. Built in one size only for 600 volts.

Weight
28 lbs.

Code Word
MARAILIC

No. 8 B-P Special

This grinder is the same as the 8 B-P except that the arbor housing and arbor are made longer to bring the inner face of the emery wheel 12 inches from the motor housing. It can be used to advantage in grinding on the sides of deep girder rails and on special work. Not carried in stock; made only on order.

Weight
33 lbs.

Code Word
MOSAIC

Care of Little Giant Electric Tools *600 Volt Direct Current*

IT IS of vital importance to have portable electric tools in first-class operating condition at all times and this can be accomplished by the exercise of a little care and attention. When the customer's plant is provided with a tool room, it is desirable to have the tool sent there occasionally to be looked over and, if necessary, put in the best possible condition. It is to be expected that natural wear of the brushes and commutator will take place; therefore, these parts should be looked at occasionally.

In order to assist in the care of electric tools, the following suggestions may be of benefit:

Lubrication: The gears of Little Giant electric tools are intended to run in grease and an opening in the gear case is provided for its insertion. We recommend the application of two or three tablespoonfuls of high-grade non-fluid oil to the gears every two or three weeks, when the tools are in constant operation. Every two months the gear case should be removed, the old grease cleaned out and a liberal quantity of fresh grease applied around the gears and bearings. We have found non-fluid oil, grade K-000, very satisfactory on the type of Little Giant tools as described in this bulletin.

Commutator and Brushes: Commutator and brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the clock-spring type, which give a uniform pressure through a wide range, so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sand paper in cleaning the commutator. Never use emery cloth.

Ventilation: When the tools are being examined in the tool room, it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

Switch: The switch furnished with the Little Giant electric tools is of the quick acting type and especially designed to use with these tools. We believe that it is the best switch ever produced for portable electric tools. The switch mechanism, which is located in the pipe handle of the switch, requires a small amount of oil at very long intervals. The switch contacts should be examined and cleaned occasionally. Under normal conditions of operation there should be no destructive arcing at the switch and the contacts will last for a long time.

Cable: Little Giant tools are furnished with a very high-grade of electric cable manufactured especially for tools of this character. Do not permit your workmen to drag the drills around by the cable or to drop heavy pieces on it.

Feed Screws: Do not use feed screws other than those furnished by this Company. A longer feed screw than our standard is apt to give trouble by being screwed down too far, thus breaking through the feed screw shield and cutting into the windings.

It will repay you to follow the above suggestions.

Important

A record is maintained of every electric drill sold by the Chicago Pneumatic Tool Company. When ordering repair parts, give the serial number as well as the size and voltage of the tool for which they are required. This will insure furnishing the correct parts as well as facilitate quick delivery. Accurate interchangeability is maintained on drills of the same size and type.

If any of your tools are lost or stolen, write us giving the serial number, and we can probably locate them sooner or later when they may come in for repairs.

An efficient service department is maintained for the benefit of our customers.

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Fisher Building



Chicago, U. S. A.

District and Branch Offices

Birmingham, Ala. 801 Brown-Marx Bldg.
Boston, Mass. 182 High St.
Buffalo, N. Y. 208 Franklin St.
Cincinnati, Ohio 607 Mercantile Library Bldg.
Cleveland, Ohio 109 St. Clair Ave., N. E.
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Seattle, Wash. L. C. Smith Bldg.
St. Louis, Mo. 813-15-17-19 Hempstead St.
San Francisco, Cal. 175 First St.
Tucson, Ariz.

Foreign Offices and Representatives

Northern Mexico

(Chihuahua) D. A. Carpenter & Co., El Paso, Texas.
(Sonora) Chicago Pneumatic Tool Co., Tucson, Ariz.

Great Britain

London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Piccadilly, W. I.

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Paris, Anciens Etablissement, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Italy

Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Capellini 7.

Belgium

Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Spain, Portugal

Madrid, American Machinery Syndicate.

Cuba

Havana, The Victor G. Mendoza Co.

India

Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Japanese Empire

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Sydney, Wellington, Henry W. Peabody & Co.

South Africa

Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.

Hawaiian Islands

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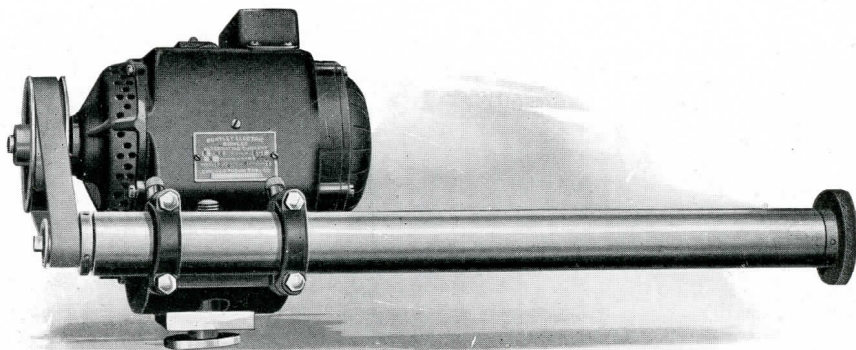
Montreal, 354 St. James St.
Toronto, Ont., 342 Adelaide St.

Vancouver, B. C., 81 Pendar St., W.
Winnipeg, Man., 150 Princess St.

Little Giant

Electric Grinders

Direct Current, Alternating Current
and Universal Types



No. 6 Precision Grinder with Internal Arbor

Bulletin E-61

Chicago Pneumatic Tool Company

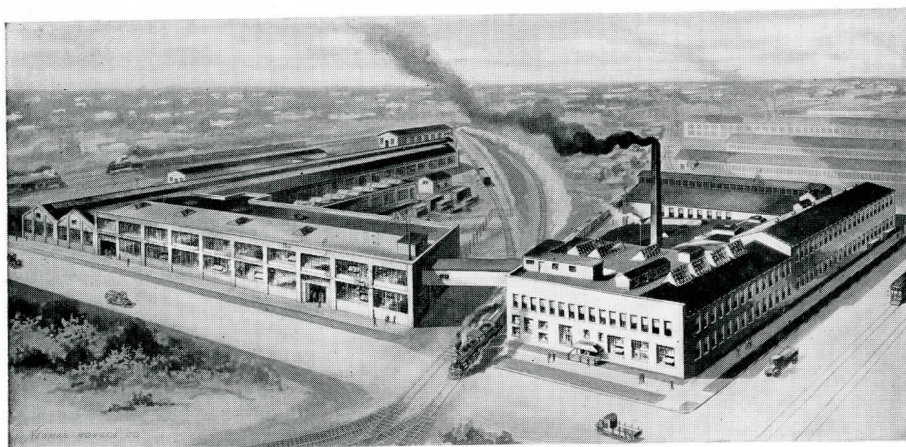
Fisher Building

New York

Chicago

San Francisco

Sales offices all over the world



Plant where Little Giant Electric Tools are made
Erie, Pa.

Foreword

THE great utility of portable electric grinders has long since been well established, but many prospective users fail to appreciate the good judgment required in selecting the proper tool to fit their needs. The variety of types and sizes shown in this bulletin provide grinders to suit nearly all requirements.

The fact that a portable grinder is operated usually by an unskilled or indifferent workman calls for the highest type of design, both electrically and mechanically. An overload of tremendous proportions can be applied by the operator unless judgment is used in holding the wheel against the work. There seems to be no way to guard against this except for the operator not to force the speed down below normal. Much more work can be accomplished by allowing the wheel to run at normal speed than to crowd it below normal in an attempt to remove more metal.

Little Giant Electric Grinders are designed to do the maximum work for their weight and it is strongly recommended that they be permitted to operate at the speeds shown in the bulletin and on the name plates.

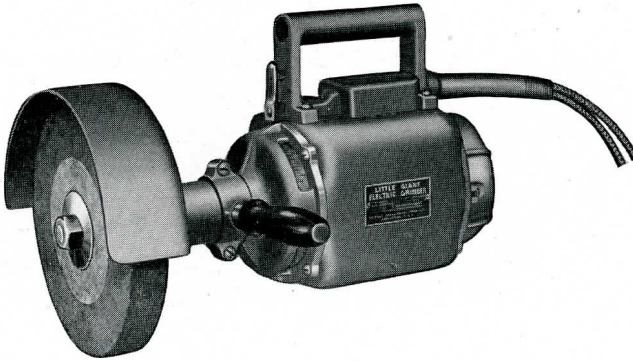
DIRECT CURRENT GRINDERS are compound wound to prevent excessive speeds at no load, tending to break the wheel.

UNIVERSAL GRINDERS are geared or belted, thus providing an appreciable load when running empty and holding the speed within safe limits.

ALTERNATING GRINDERS (two and three phase) are of the induction motor type with very close speed regulation between no load and full load.

Little Giant Portable Electric Grinders

Direct Current



THIS line of grinders is especially adapted for use in foundries, machine shops, structural shops, and for grinding rails on street railways. The grinder has been on the market for a number of years, and we have recently made important improvements, which make it a very satisfactory tool. Among other important features is an improved ventilating system for the windings, and three ball bearings for the shaft or arbor with splendid provision for lubrication. This type of grinder is built in three sizes only as follows:

FOR DIRECT CURRENT

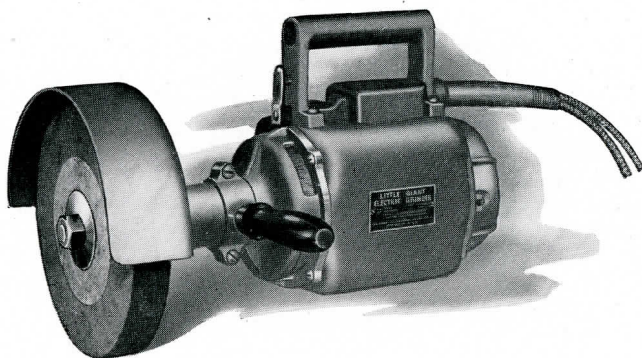
Size	Speed	Emery Wheel		Weight	20 Volts	240 Volts	600 Volts
5-BP	4,000 r. p. m.	5 in. x	½ in. x ½ in.	15 lbs.	Marcatly	Marcator	
8-BP	2,400 r. p. m.	6 in. x	1¼ in. x ⅝ in.	28 lbs.	Marailly	Marailor	Marailic
*8-BP Spl	2,400 r. p. m.	6 in. x	1¼ in. x ⅝ in.	33 lbs.	Mosaily	Mosaior	Mosaic

*Note: The 8-BP Special is equipped with a special arbor housing and arbor to bring the wheel 12 inches from motor housing. Made on order only.

Little Giant Portable Electric Grinders

Alternating Current

Two and Three Phase, 60 Cycles



THESE grinders are equipped with induction motors and are adapted for operation direct from the power lines in the shop or factory. The absence of a commutator makes this tool especially desirable in many classes of work. The drop in speed from no load to full load is very slight and ample power is developed for the size of wheel carried.

Size	Speed	Emery wheel	Weight
5 BP	3600 R. P. M.	5x 1/2x1/2	15 pounds
8 BP	1800 R. P. M.	6x1 1/4x5/8	28 pounds
8 BP Special	1800 R. P. M.	6x1 1/4x5/8	33 pounds

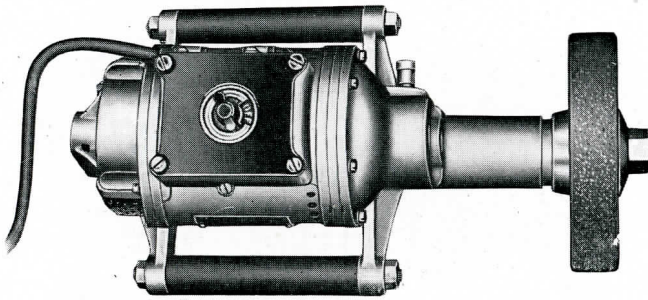
FOR ALTERNATING CURRENT, TWO AND THREE PHASE, 60 CYCLES

Size	TWO PHASE			THREE PHASE		
	120 Volts	240 Volts	440 Volts	120 Volts	240 Volts	440 Volts
5-BP	Dunegocly	Dunegocor		Trinegocly	Trinegocor	
8-BP	Duneighly	Duneighor	Duneighic	Trineighly	Trineighor	Trineighic
*8-BP Sp'l	Dunaxly	Dunaxor	Dunaxic	Trinaxly	Trinaxor	Trinaxic

*NOTE.—The 8-BP Special is equipped with a special arbor housing and arbor to bring the wheel 12 inches from motor housing. Made on order only.

Little Giant Portable Electric Grinders *Universal Type*

Licensed under Burke Universal Motor Patent



THIS line of grinder possesses a number of very novel features for which there has long been an urgent demand. The tools will operate interchangeably on direct or single phase alternating current of 60 cycles or less, it being simply necessary to have the proper voltage for which the tool is wound.

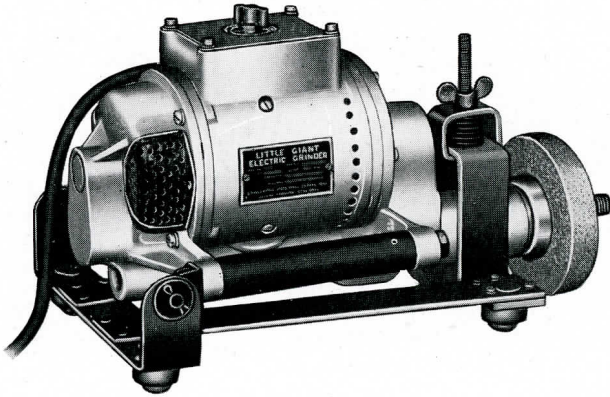
The armature shaft is geared to the emery wheel arbor by means of stub tooth spur gearing, running in grease. This gearing permits the emery wheel arbor to be mounted on one side of the housing, making it possible to get the maximum wear out of the wheel, which can be worn down to the diameter of the clamping washers. This arbor is carried on ball bearings at each end. A guard for the wheel (not shown in the cut) is provided.

Built in three sizes, as follows:

Size	Speed	Emery Wheel	Net Weight	Shipping Weight	CODE WORDS	
					120 Volts	240 Volts
No. 00	4800	4 x $\frac{3}{4}$ x $\frac{1}{2}$	13	22	Monodusly	Monodusor
No. 0	3800	5 x 1 x $\frac{5}{8}$	20	32	Monolamly	Monolamor
No. 1	3200	6 x $1\frac{1}{4}$ x $\frac{3}{4}$	29	45	Monostocly	Monostocor

Little Giant Electric Surface Grinders *Universal Type*

Licensed under Burke Universal Motor Patent



TO MEET the demand for a tool for grinding flat surfaces, we have mounted our Universal grinders, described on page 6, on a carriage provided with ball casters and having an adjustment to prevent gouging into the work and at the same time to allow for the wear of the emery wheel. A spring raises the wheel off of the work and an adjustable limit stop prevents its being pressed down too far into the work. This tool is especially adapted for grinding flush rivets on flat plates, or removing lumps from flat castings.

Built in three sizes, as follows:

Size	Speed	Emery Wheel	Net Weight	Shipping Weight	CODE WORDS	
					120 Volts	240 Volts
No. 00	4800	4 x ¾ x ½	14½	24	Monothly	Monothor
No. 0	3800	5 x 1 x ⅝	22	35	Monimisly	Monimisor
No. 1	3200	6 x 1¼ x ¾	32	50	Monyssonly	Monyssonor

No. 6

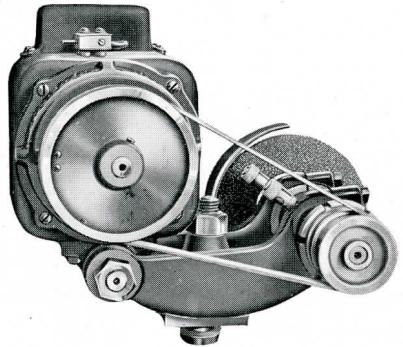
Little Giant Precision Grinder

Universal Type

Licensed under Burke Universal Motor Patent

For External and Internal Grinding

BUILT for a wide range of accurate work, this grinder has embodied in it some very novel features. The lower side of the frame is turned, as shown and rests on a convex washer, to be clamped to the tool post of the machine on which the grinder is to be used. Thus, the center of the grinding arbor may be raised or lowered to the proper height by simply pushing the grinder forward or backward on the convex washer and tightening the clamping bolt. This permits the tool to be used on lathes as small as 16 inch swing and as large as 30 inch.



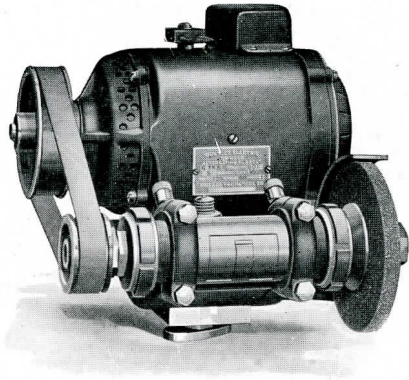
The arbor for external grinding carries a 5-inch wheel and is provided with split sleeve bearings, tapered on the outside, which can be very accurately adjusted for wear. The cap screws securing the straps which hold the arbor to the frame of the machine protrude very slightly beyond the arbor housing itself, which permits the emery wheel to be worn down to a small diameter and also allows sufficient clearance for the grinder back of the tail stock of a lathe. This is a very important feature and not found in most grinders of the tool post type.

The arbor for internal grinding (see frontispiece) runs on high-grade ball bearings, located at each end of the arbor, providing a support close to the wheel and the driving pulley. We are prepared to furnish several sizes of internal arbors adapted to grind holes as small as $\frac{1}{2}$ inch and as large as 9 inches. The speeds of these various arbors are arranged to give the proper cutting speed for the size of wheel carried.

The arbors can be changed on the grinder in a very few minutes, by simply removing the four screws holding the caps which clamp the arbor to the frame. The motor is mounted on a hinge pin, which permits it to be swung back to tighten the belt.

No. 6
Little Giant Precision Grinder
With External Arbor

Continued



THE motor for the No. 6 Precision Grinder is of the Universal type and will operate interchangeably on direct or single phase alternating current. The No. 2 motor is the standard size regularly furnished, but a large motor known as the No. 3 can be furnished on special order at extra cost.

CODE WORDS

SIZES	120 Volts	240 Volts
No. 2 Motor with Bracket, but without Arbors.....	Monseckorly Monaringly	Monackor Monaringor
No. 3 Motor with Bracket, but without Arbors.....		

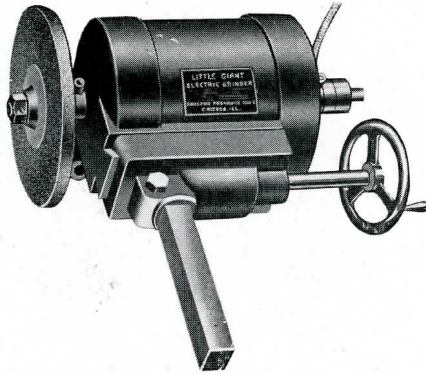
External and Internal Arbors

Arbor No.	Type	Standard or Special	Limits of Hole To Be Ground		Dimension of Wheel			Approx. Speed R.P.M.	Code Word
			Smallest Diameter	Greatest Depth	Diameter	Thick- ness	Bore		
No. 1	Ext.	Standard			5"	1/2"	3/4"	5600	Macab
No. 2	Int.	Special	4"	12"	3" to 4"	1/2"	1/8"	7000	Macau
No. 3-6	Int.	Standard	2 1/4"	6"	2" to 3"	3/8"	1/8"	9300	Maced
No. 3-9	Int.	Standard	2 1/4"	9"	2" to 3"	3/8"	1/2"	9300	Machilo
No. 3-12	Int.	Standard	2 1/4"	12"	2" to 3"	3/8"	1/2"	9300	Macidez
No. 4	Int.	Special	1 1/4"	7"	1" to 1 1/2"	3/8"	3/8"	18650	Macini
No. 5	Int.	Special	1 1/8"	5"	3/4" to 1"	3/8"	5/16"	22400	Macizar
No. 6	Int.	Special	1 1/8"	3 1/2"	1 1/2" to 3/4"	3/8"	3/16"	33300	Macles
No. 7	Int.	Special	1 1/8"	2 1/2"	3/8" to 1/2"	5/16"	1/8"	45700	Macline
No. 8	Int.	Special	1/4"	1 1/2"	5/16" to 5/16"	1/4"	1/16"	81900	Maclent

In ordering be careful to select the proper size of arbor required for your work, noting that all special arbors are not carried in stock. The prices depend upon size of motor and type of arbor ordered.

Little Giant Tool Post Grinders

Direct Current only—110 and 220 volts



THE Little Giant Tool Post Grinders are made in several sizes, and are built for accurate work. The bearings consist of tapered steel bushings driven by the shaft and running in phosphor bronze bushings fastened to the housing of the grinder. No part of the motor housing is used as a bearing. Wick feed oilers are used and feed only as the oil is required. Dust-proof collars are provided on the shaft, serving to keep the emery out of the bearings and the windings.

BUILT IN TWO SIZES WITH TOOL POST SHANK AS FOLLOWS:

Size	Speed	Emery wheel inches	Wheel	Size shank
5-T	4,000 R. P. M.	5x $\frac{3}{8}$ x $\frac{1}{2}$	14 lbs.	$\frac{5}{8}$ x1
8-T	2,400 R. P. M.	8x $\frac{3}{8}$ x $\frac{5}{8}$	29 lbs.	$\frac{5}{8}$ x1 $\frac{1}{4}$

CODE WORDS

5-T—110 volts.....	Militantly	220 volts.....	Militantor
8-T—110 volts.....	Moribundly	220 volts.....	Moribundor

Standard equipment includes emery wheel, 10 feet flexible cord with fuse, one extension mandrel for internal grinding with wheel ($1\frac{1}{4}$ inch diameter and $\frac{3}{8}$ inch bore for 5-T and 2 inch x $\frac{3}{8}$ inch bore for 8-T), and two extra fuses. Tool Post Grinders not made for Alternating Current.

Care of Little Giant Electric Grinders

PERHAPS the most important point to be observed in the operation of an electric grinder is to *keep the wheel trued up*. A wheel which is out of round will cause a heavy blow to be struck on the arbor each time the high spot hits the work, resulting in damage to the bearings in a very short time. Caution your operators not to try to grind with a wheel that does not run true.

Lubrication: See that ample lubrication is provided at all times. Grease cavities or cups are provided for non-fluid oil and should be kept reasonably well filled. We recommend F-2 non-fluid oil.

Commutator and Brushes: Commutator and Brushes should be examined occasionally to see that excessive wear is not taking place on either part. Removable enclosing covers permit the brushes and commutator to be examined without difficulty. The commutator should be kept fairly clean and the brushes should not be permitted to wear too short. The brush holders are provided with springs of the clock-spring type, which give a uniform pressure through a wide range so that no adjustment is required after leaving the factory. The brush holders are carefully set in position for proper commutation and should not be tampered with. Use No. 00 sand paper in cleaning the commutator; never use emery cloth.

Ventilation: When the grinders are being examined it is a good plan to clean out the air holes in the housing and enclosing covers. These should be cleaned from the inside, if possible, so as to remove the dirt instead of pushing it into the machine.

Cable: Do not permit your men to drag the grinders around by the cable.

Do not bear on the wheel so hard that the speed is reduced below that shown on the name plate of the tool. You can accomplish more work with less energy consumption and not endanger the windings of the tool.

It will repay you to follow the above suggestions.

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Fisher Building

Chicago, U. S. A.

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Los Angeles, Cal. 307-09 East Third St.	Tucson, Ariz.
Milwaukee, Wis. 1305 Majestic Bldg.	Tulsa, Okla. 313 Richards Bldg.

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(Sonora and Chihuahua).

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Spain, Portugal

Madrid, American Machinery Syndicate.

India

Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

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Tokyo, Osaka, Horne Co., Ltd.

Australia, New Zealand, Wellington

Sydney, Henry W. Peabody & Co.

South Africa

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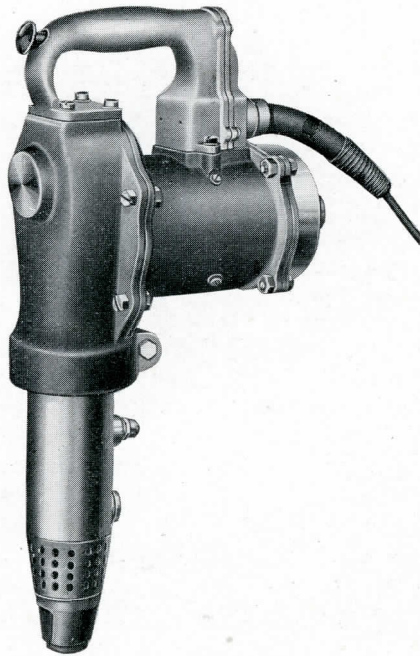
Winnipeg, Man., 150 Princess St.

LITTLE GIANT

Electric Hammer Drill

Universal Motor

Patented Nov. 9, 1914
Licensed under Burke Universal Motor Patent



Bulletin E-62

Chicago Pneumatic Tool Company
U. S. A.

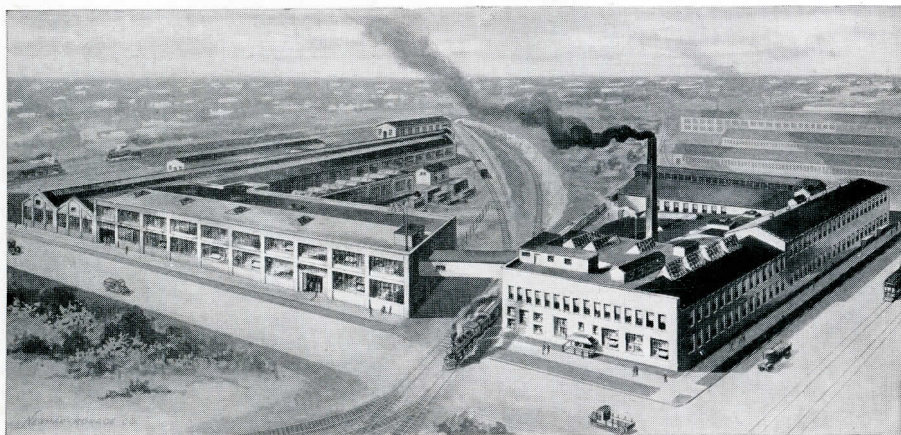
Little Giant Electric Hammer Drill

(Universal Motor)

THE Little Giant Electric Hammer drill is in extensive use in drilling concrete and soft stone, as well as for light chipping of metals. The tool is equipped with a universal motor, and will operate interchangeably on direct or alternating current. It is simply necessary to have the motor wound for the correct line voltage on which it is intended to operate.

The hammer blow which is delivered by a piston on the drill steel or chisel, is produced by pneumatic impact and is very effective. At the instant the blow is struck, the piston is running free of all mechanical parts, and therefore no shock or vibration is transmitted to the electrical parts of the tool. This means that there is no tendency for the electrical wires or connections to be crystallized due to incessant jarring. The tool is well balanced, and when held loosely in the hand, the line of center of gravity falls between the third and middle fingers of the hand, and lies within the barrel of the tool, causing the tool to hang vertically. The switch is conveniently located in the handle for the control of the electric circuit. All bearings are of the ball type, provision being made for the lubrication of all revolving and reciprocating parts. The gears and those portions of the moving parts subject to wear are all hardened.

When drilling holes in stone or concrete in a downward position, the powdered cuttings collect rapidly and not only absorb and waste much of the force of the blow, but tend to choke up the hole, making it difficult to remove the drill bit. A special feature of the Little Giant electric hammer drill is the live air device for clearing the hole of the cuttings while drilling.



Plant where Little Giant Electric Tools are made
Erie, Pa.

This makes it possible not only to deliver the full force of the blow on the solid stone or concrete, but the removal of the drill bit is accomplished without difficulty, as there are no cuttings left in the hole to interfere. Hollow steels for this purpose are furnished as shown.

GENERAL DATA. Size No. 0:

Wound for 110 or 220 volts (Universal type to operate on either D. C. or single phase A. C.)

Maximum capacity, in soft stone or concrete, inches..... 1

Weight, in pounds, net.....21

Over all length, inches.....17½

EQUIPMENT:

10 feet electrical conductor, with Edison plug and fuse.

2 drill steels (specify type, diameter and length when ordering).

1 rotating wrench.

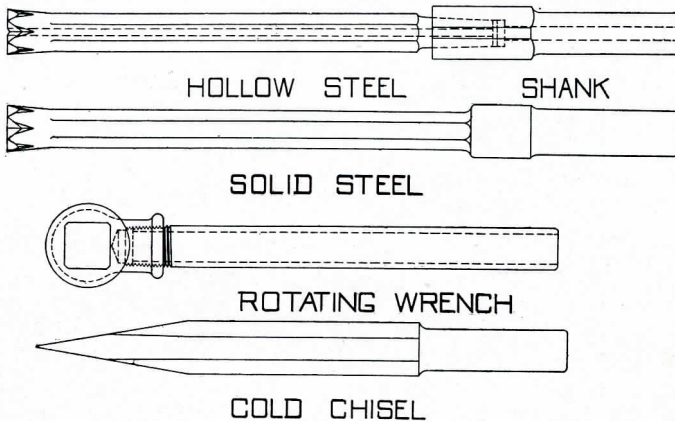
Note: If the tool is intended for chipping, two flat chisels will be furnished instead of drill steels and rotating wrench.

CODE WORDS

110 volts
Monavirly

220 volts
Monaviror

Steels for No. 0 Hammer Drill



STANDARD HOLLOW STEELS 8 inches long below the rotating wrench are furnished in diameters of from ½ inch to 1 inch, inclusive.

STANDARD SOLID STEELS with detachable shanks, 6 and 8 inches long below the rotating wrench, are furnished in diameters of from ¼ inch to ¾ inch.

STANDARD SOLID STEELS with shanks forged integral with the steel, 8 inches long below the rotating wrench, are furnished in diameters of from 13-16 inch to 1 inch, inclusive.

STANDARD COLD CHISELS are 6 inches long.

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Chicago Pneumatic
Building



6 East 44th Street
New York, U. S. A.

Branch Offices and *Service Stations

*Birmingham, Ala. 1925 No. 5th Ave.
*Boston, Mass. 182 High St.
*Buffalo, N. Y. 208 Franklin St.
*Chicago. 300 No. Michigan Ave.
*Cincinnati, Ohio. Pearl and Vine Sts.
*Cleveland, Ohio. 109 St. Clair Ave., N. E.
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Franklin, Pa. 6, 13th St.
Houston, Texas 407 Carter Bldg.
Joplin, Mo. 308 Wall St.
*Los Angeles, Cal., 307 East Third St.

*Minneapolis, Minn. 5th Ave. and 5th St., So.
New Orleans, La. 853 Carondelet St.
*New York 52 Vanderbilt Ave.
*Philadelphia, Pa. 1740 Market St.
*Pittsburgh, Pa. 12 Wood St.
*Portland, Ore. 307 Railway Exchange
Richmond, Va. 1004 Mutual Bldg.
Salt Lake City, Utah 117 W. 2d So. St.
*Seattle, Wash. 119 Jackson St.
*St. Louis, Mo. 813 Hempstead St.
*San Francisco, Cal. 175 First St.
Tucson, Ariz. 40 Scott St.

Foreign Offices and Representatives

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Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Cuba

Havana, The Victor G. Mendoza Co., No. 3 Cuba St.

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Paris, Anciens Etablissements, Glaenzer & Perreaud, 18-20 Faubourg du Temple.

Germany

Berlin, Internationale Pressluft und Elektrizitäts Gesellschaft m. b. H.

Great Britain

London, The Consolidated Pneumatic Tool Co., Ltd., Egyptian House, 170 Picadilly, W. I.

Hawaiian Islands

Honolulu, H. S. Gray & Co., 832 Fort St.

Italy

Milan, The Consolidated Pneumatic Tool Co., Ltd., Via A. Capellini 7.

India

Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Canada

Canadian Pneumatic Tool Company, Ltd.

Factory 25-27 Antoine St., Montreal, Canada

The Holden Company, Ltd.

General Sales Representatives for Canada

Montreal, 354 St. James St.
Toronto, Ont., 342 Adelaide St.

Vancouver, B. C. 81 Pender St. W.
Winnipeg, Man., 150 Princess St.

Japanese Empire

Osaka, Seoul, Tokyo, Horne Co. Ltd.
(New York address: 51 Chambers St., N. Y.)

Northern Mexico

(Chihuahua) D. A. Carpenter & Co., El Paso, Texas.
(Sonora) Chicago Pneumatic Tool Co., Tucson, Ariz.

Norway

Christiania, Scandinavia, A. G. Hartman, Box No. 1.

Portugal

Lisbon, American Machinery Syndicate.

Russia, Siberia

American Steel Export Co. (Woolworth Bldg., N. Y.)

Scotland

Fraserburgh, The Consolidated Pneumatic Tool Co.

South Africa

Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.

Spain

Barcelona, Cadiz, Madrid; American Machinery Syndicate.
Madrid, Sindicato de Maquinaria Minera Americana.

Osborn Safety Device
for
LITTLE GIANT
Electric Drills

Patented November 10, 1914



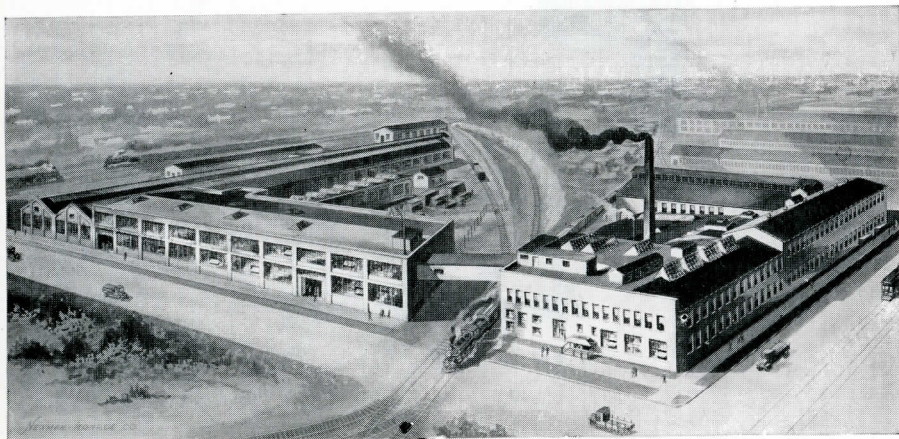
Bulletin E-63

Chicago Pneumatic Tool Company
U. S. A.

Osborn Safety Device for Little Giant Electric Drills

IT HAS been found through long use of portable electric drills or reamers, that due to the extremely heavy work required of the larger tools, they must of necessity be built very strong and powerful to accomplish the desired results. The ultimate torque or pulling force at the spindle of the larger drills or reamers is sufficient to overcome almost any resistance to turning that the cutting tool may encounter in reaming or drilling a hole. This torque, of course, reacts through the housing of the tool and is transmitted through the pipe handles to the operator, who must resist it in order to have the tool accomplish the work. When the bits are cutting properly, the operator has no difficulty in holding against the torque of the motor. Should the bit or reamer bind in the hole or take an extra heavy bite in the work, the motor immediately responds with greater power and the operator has to hold against this increased torque. If the operator has to stand on an iron plate, as is frequently the case in steel fabricating plants, or is unprepared to resist the sudden extra heavy thrust on the handles of the tool when the reamer bit sticks or binds, he is frequently forcibly thrown aside and possibly seriously injured by falling or being hit by the handles of the drill which are then revolving with the drill housing.

The Osborn Safety Device is designed to prevent accidents due to the sticking of the reamer bit as described above. It accomplishes this object by automatically shutting off the current and applying electric braking action immediately upon the operator's hand being removed from the handle, either voluntarily or by the jerking of the handle out of his hands.



Plant where Little Giant Electric Tools are made
Erie, Pa.

The Osborn Safety Device consists of a special switch with connections including a small armature resistance mounted directly on the switch case. When the operator's hand is removed from the trigger shown at the right of the cut, a spring immediately opens the main circuit from the line, thereby cutting off the line current from the drill. Immediately after the line circuit is open, a circuit is made through the armature and field windings, causing the motor to become a generator, the armature being practically short circuited through the resistance. The load thus produced on the armature causes it to stop almost immediately, thus effectively destroying the torque or pull on the handles of the tool. The tool cannot become unmanageable, as immediately upon releasing the switch the electric braking takes place, thus acting as a perfect safety device for the operator.

The Device also has a commercial value in addition to the safety feature, due to the fact that the tool stops instantly upon the opening of the switch, thereby obviating the necessity of the workmen waiting until the spindle stops before starting work on the next hole.

Another advantage of the Device, due to its quick stopping of the tool, is that when the tool is laid down on the floor (many of the steel fabricating plants have dirt floors) it has stopped running and there is no tendency to draw metallic particles or dust into the tool through the medium of its fan.

The Company is prepared to equip all of its larger size drills with the Osborn Safety Switch at a small increase in cost. Old drills can be equipped with the complete Osborn Switch very easily, and the company is prepared to quote on these Switch Devices separately, for that purpose. It is necessary, however, when quoting on the Osborn Safety Switch for old tools, to give the type, size and name of the manufacturer of the tool.

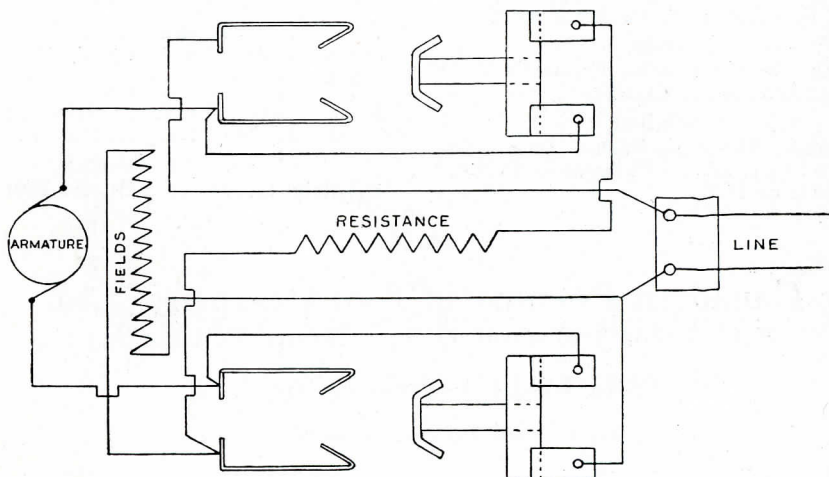


Diagram of Switch Connections

Chicago Pneumatic Tool Company

Cable Address "Pneumatic"

Fisher Building



Chicago, U. S. A.

District and Branch Offices

Birmingham, Ala. 801 Brown-Marx Bldg.
Boston, Mass. 182 High St.
Buffalo, N. Y. 208 Franklin St.
Cincinnati, Ohio Pearl and Vine Sts.
Cleveland, Ohio 109 St. Clair Ave., N. E.
Detroit, Mich. 95 E. Larned St.
Eldorado, Kan.
El Paso, Texas 303 San Francisco St.
Erie, Pa. 12th and Cranberry Sts.
Franklin, Pa. 6, 13th St.
Houston, Texas 407 Carter Bldg.
Joplin, Mo. 308 Wall St.
Los Angeles, Cal. 307-09 East Third St.

Milwaukee, Wis. 1418 Majestic Bldg.
Minneapolis, Minn. 5th Ave. and 5th St., So.
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New York 52 Vanderbilt Ave.
Philadelphia, Pa. 1740-42-Market St.
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Richmond, Va. 1004 Mutual Bldg.
Salt Lake City, Utah 117-19 W. 2nd So. St.
Seattle, Wash. L. C. Smith Bldg.
St. Louis, Mo. 813-15-17-19 Hempstead St.
San Francisco, Cal. 175 First St.
Tucson, Ariz.

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Milan, The Consolidated Pneumatic Tool Co., Ltd., via A Capellini 7.

Belgium

Brussels, The Consolidated Pneumatic Tool Co., Ltd., 22 Chaussee de Forest, Porte de Hal.

Spain, Portugal

Madrid, American Machinery Syndicate.

Cuba

Havana, The Victor G. Mendoza Co.

India

Bombay, Consolidated Pneumatic Tool Co., Ltd., Rampart Row, Fort.

Japanese Empire

Tokyo, Osaka, Horne Co., Ltd.

Australia, New Zealand

Sydney, Wellington, Henry W. Peabody & Co.

South Africa

Johannesburg, The Consolidated Pneumatic Tool Co., Ltd., 190 Main St.

Hawaiian Islands

Honolulu, H. S. Gray & Co., 832 Fort St.

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The Holden Company, Ltd.

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Toronto, Ont., 342 Adelaide St.

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Winnipeg, Man., 150 Princess St.

